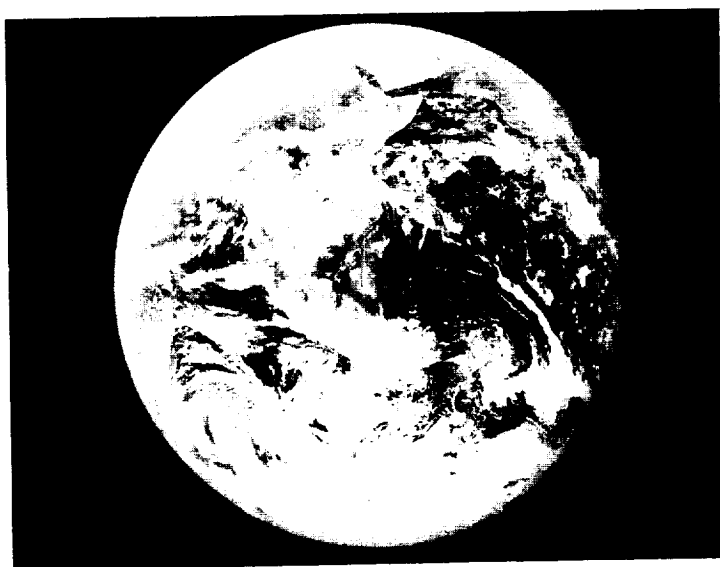


**DATA CATALOG SERIES
FOR SPACE SCIENCE AND
APPLICATIONS FLIGHT MISSIONS**

Volume 4B

**Descriptions of Data Sets from
Meteorological and Terrestrial Applications
Spacecraft and Investigations**



September 1989

(NASA-TM-101880) DATA CATALOG SERIES FOR
SPACE SCIENCE AND APPLICATIONS FLIGHT
MISSIONS. VOLUME 4B: DESCRIPTIONS OF DATA
SETS FROM METEOROLOGICAL AND TERRESTRIAL
APPLICATIONS SPACECRAFT AND INVESTIGATIONS

N90-50123

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G3/62 0235477

CATEGORIES OF SPACECRAFT USED IN THIS SERIES

PLANETARY AND HELIOCENTRIC

This category includes probes to the various planets of the solar system and probes designed to make measurements of the characteristics of interplanetary space. Also included are the probes that will pass out of the solar system into interstellar space.

METEOROLOGICAL AND TERRESTRIAL APPLICATIONS

This category includes geocentric spacecraft whose primary mission is to make remote sensing measurements of the earth and its atmosphere. Spacecraft that carry instrumentation to make geodesy and gravimetry measurements are also included. Technology, engineering, and communications spacecraft or investigations are not included because NSSDC does not archive such data.

ASTRONOMY, ASTROPHYSICS, AND SOLAR PHYSICS

This category consists of scientific satellites designed to conduct investigations of the sun, stellar objects, nonstellar sources, and interstellar phenomena. These satellites are geocentric except for the selenocentric RAE-B.

GEOSTATIONARY AND HIGH-ALTITUDE SCIENTIFIC

This category includes those satellites designed to conduct investigations of the characteristics of near-earth space from orbits with apogees near geostationary altitude and higher. Three of the spacecraft are selenocentric. Communications satellites are not included because NSSDC does not archive such data.

LOW- AND MEDIUM-ALTITUDE SCIENTIFIC

This category includes those spacecraft whose apogees are well below geostationary altitude and whose primary purpose is to conduct investigations in the near-earth environment.

DATA CATALOG SERIES FOR SPACE SCIENCE
AND APPLICATIONS FLIGHT MISSIONS

Volume 4B

DESCRIPTIONS OF DATA SETS FROM METEOROLOGICAL
AND TERRESTRIAL APPLICATIONS SPACECRAFT AND INVESTIGATIONS

By

Carolyn Ng
G. Richard Stonesifer

September 1989

National Space Science Data Center (NSSDC)/
World Data Center A for Rockets and Satellites (WDC-A-R&S)
National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

PREFACE

This document is one volume of a catalog series (see inside front cover) that describes data sets and related spacecraft and investigations from space and applications flight investigations. The series describes the data sets held by the National Space Science Data Center (NSSDC) and some of the data sets held by NASA-funded and other investigators. The documents in this series serve as guides to extensive data sets held and serviced by other Government agencies.

This volume is the second and last one for the Meteorological and Terrestrial Applications catalog. The first volume described the spacecraft and investigations, along with personnel names and affiliations. This volume describes the data sets associated with the various investigations and how users can obtain the data.

The authors would like to thank the many investigators who have submitted their data for archiving at NSSDC. Their cooperation in supplying current status information is gratefully acknowledged. Thanks are also extended to the other NSSDC personnel, employees of the onsite contractor, Science Applications Research (SAR), who have been involved in the information handling necessary to produce this volume. Special acknowledgment is given to Karen Satin for her extensive editorial assistance and to Patricia Ross for her invaluable assistance with the computer data base.

The Data Center is continually striving to increase the usefulness of its data holdings, supporting indexes, and documentation. We are now beginning to provide remote electronic accessibility to some of the data and information files. Scientists are invited to submit their space science data and related documentation to NSSDC. Their comments on, and corrections to, the present catalog will be greatly appreciated. Catalog recipients are urged to inform potential users of its availability.

Carolyn Ng
G. Richard Stonesifer
September 1989

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INTRODUCTION

INTRODUCTION

1.1 PURPOSE

Since the National Space Science Data Center (NSSDC) was established by the National Aeronautics and Space Administration (NASA), it has provided data and information from space science and applications flight investigations in support of additional studies beyond those performed as the principal part of any flight mission. This volume is one of a series of 11 that describes (1) the spacecraft investigations for which NSSDC possesses data or can direct people to the data source, (2) all data sets held by NSSDC, (3) some data sets held and serviced by NASA-funded investigators, and (4) some data sets held and serviced by other investigators. The series also directs readers to extensive data sets held and serviced by other Government agencies, particularly the National Oceanographic and Atmospheric Administration (NOAA).

The 11-volume series consists of (1) five volumes that describe the spacecraft and their associated investigations, separated into various categories; (2) five corresponding volumes that describe investigation data sets and the available orbital information, and (3) a master index volume. The five categories of spacecraft are (i) Planetary and Heliocentric, which includes planetary flybys and probes; (ii) Meteorological and Terrestrial Applications; (iii) Astronomy, Astrophysics, and Solar Physics, which are all geocentric except the selenocentric RAE-B; (iv) Geostationary and High-Altitude Scientific; and (v) Low- and Medium-Altitude Scientific. It is impossible to provide an organization of categories that separates the investigations cleanly into scientific disciplines, since many missions were multidisciplinary. With the above organization, which is partly discipline-oriented and partly orbit-oriented, it is found that in nearly all cases a given spacecraft belonged clearly to only one of the five categories. The few exceptions encountered have resulted in some data sets appearing in more than one data set volume.

This catalog series and the periodic *NSSDC Data Listing* briefly identify NSSDC data sets. They will be for some time to come the principal offline sources of information on NSSDC holdings in the disciplines that NSSDC handles. However, NSSDC is bringing its information files to a state of remote electronic accessibility so that users may have easy access to the most current information. The NASA Climate Data System (NCDS) and the Master Directory (MD) are good examples.

1.2 ORGANIZATION

Volume 4A of the *NSSDC Data Catalog Series for Space Science and Applications Flight Missions* describes geocentric spacecraft missions that make remote sensing measurements of the earth and its atmosphere. It contains descriptions not only of those investigations for which NSSDC has data sets (or reasonably expects to receive them) but also of others that are located elsewhere, such as at NOAA.

This volume, 4B, contains descriptions only of NSSDC data sets from the investigations described in Volume 4A. Most proprietary data sets, such as the geodetic and gravimetric data sets, are excluded. Data sets that are superseded by new ones processed with improved algorithms are also omitted from this volume. Consequently, a number of investigations described in Volume 4A do not have corresponding data sets in Volume 4B. However, nearly all the spacecraft and investigation descriptions for the data sets in this volume are given in Volume 4A. The few descriptions that were not in Volume 4A are given in Appendix A of the present volume.

For easy reference to Volume 4A, this volume is organized in the same order; namely, the data set descriptions are presented alphabetically by spacecraft common name. Under each spacecraft name, the appropriate investigations are given alphabetically by the name of the principal

investigator. Under each investigation heading, the data set descriptions are arranged according to the NSSDC ID,* which is an identification code based on the international ID. The data set ID is the investigation ID followed by a letter that is assigned, in alphabetical order, whenever a new data set is received at NSSDC. If the data set sequence for an investigation is not continuous (e.g., 01A, 01B, 01D), it means that the omitted data sets do not meet the selection criteria given in the above paragraph. This is particularly true with the Nimbus data sets.

Descriptions of each data set begin with the following fixed-field information: the data set short and long names, the NSSDC ID, the time period covered, the quantity of data, and the medium on which the data are stored. The 33-character short name is included because it is the only name that appears in the periodic publication *NSSDC Data Listing*, which for many years has been the principal means of announcing NSSDC data holdings. For certain atmospheric science data sets that have been restored, i.e., copied onto a higher density tape medium such as 6250-bpi magnetic tapes or onto IBM 3480 tape cartridges, the quantity and medium may not be accurate.

The data set description, in free text, is given below the fixed-field information. An attempt has been made to indicate first the source of the data set, its basic contents, and its medium. For all data sets, especially the digital ones, storage medium characteristics stated are those that currently hold the data. If these characteristics are not suitable, data users can discuss their requirements with the NSSDC staff; NSSDC may be able to provide the same data in a more convenient format. Following the introductory statements, a more detailed description of the data set contents is given. Additional information is typically available for the data sets and is provided either on request or with the information packet that is sent with the requested data. NSSDC does not provide every publication that is referenced in the description unless it is necessary to use with the data and is not readily available, such as an internal agency report. In such cases, NSSDC can provide a microfiche of the file copy.

Section 3, Index of Data Sets, follows the Data Set Descriptions and is ordered alphabetically by spacecraft as are the descriptions. It provides, in effect, a detailed table of contents for the catalog.

Certain words, phrases, and acronyms used in this volume are defined in Appendix B.

For most data sets in this catalog, the corresponding spacecraft ephemeris data are merged with the data from the investigations. In some cases, the ephemeris data must be obtained from separate standard data sets identified by the spacecraft ID followed by the designation 00A, 00B, or 00C. These data sets are described only once, in Appendix C, since each type is very uniform in content and format. The availability of such data sets for the spacecraft of interest in this volume is indicated by a table also given in Appendix C. In some other cases, there may be additional data sets associated with the spacecraft and designated as 00D, 00E, 00F, etc., which may contain nonstandard ephemeris information or other data information. Descriptions of these other data sets are listed in Section 2, Data Set Descriptions, after the spacecraft name and before the investigation data sets.

Appendix D provides a directory of image data sets that are available either at NSSDC or from other agencies. The directory includes data sets that are not described in Section 2, Data Set Descriptions.

* An identification code used in the NSSDC information system. Each successfully launched spacecraft and experiment is assigned a code based on the launch sequence of the spacecraft. This code (e.g., 78-098A for the spacecraft Nimbus 7) corresponds to the COSPAR international designation. The experiment codes are based on the spacecraft code. For example, the experiments carried aboard the spacecraft 78-098A are numbered 78-098A-01, 78-098A-02, etc. Similarly, data sets corresponding to experiment 78-098A-01 are coded by a letter in alphabetical order (e.g., 78-098A-01A, 78-098A-01B, etc.).

Although most earth science data held at NSSDC are offline data sets, NASA-sponsored researchers may gain access to online advanced information and data systems such as the NASA Climate Data System. Appendix E describes the functionalities of NCDS and lists the data sets that are currently accessible.

Document and Data Request Forms are provided at the end of this catalog for the users' convenience.

1.3 NSSDC PURPOSE, FACILITIES, AND SERVICES

As stated in Section 1.1, NSSDC was established by NASA to provide data and information from space and earth science investigations in support of additional studies beyond those performed by principal investigators. As part of that support, NSSDC has prepared this series of volumes providing descriptions of archived data. In addition to its function of providing selected data and supporting information for further analysis of space science flight experiments, NSSDC produces numerous publications. Among these publications are an NSSDC newsletter, the *Report on Active and Planned Spacecraft and Experiments*, and various users' guides.

The majority of data available through NSSDC result from individual experiments carried on board individual spacecraft. NSSDC has developed an information system utilizing a spacecraft/investigation/data identification hierarchy. This catalog is based on the information contained in that system.

In addition to spacecraft data, NSSDC maintains some supporting information and other usable data that may be related to the needs of the researchers. Data from campaigns or projects such as the International Satellite Cloud Climatology Project (ISCCP) and the First ISCCP Regional Experiment (FIRE), which gather information from a number of diverse sources, are also available from NSSDC via the online data systems.

NSSDC provides facilities for reproduction of data and for onsite data use. Researchers are invited to study the data while at NSSDC. The Data Center staff will assist users with data searches and the use of equipment.

NSSDC provides services to any individual or organization resident in the United States and to researchers outside the United States through the World Data Center A for Rockets and Satellites (WDC-A-R&S). Normally, a charge is made to cover the cost of processing a request and reproducing the data. The researcher is notified of the charge, and payment must be received prior to processing. However, as resources permit, the director of NSSDC may waive charges for modest amounts of data when they are used for scientific studies or for specific educational purposes and when they are requested by an individual affiliated with (1) NASA installations, NASA contractors, or NASA grantees; (2) other U.S. Government agencies, their contractors, or their grantees; (3) universities or colleges; (4) state or local governments; or (5) nonprofit organizations.

Copies of the Data Request Form are provided at the end of this catalog to facilitate ordering data from NSSDC. A researcher may also obtain data described in this catalog by a letter, a telephone request, an onsite visit, or electronic mail utilizing the Space Physics Analysis Network (SPAN) or Telenet. Anyone who wishes to obtain data for a scientific study should specify the NSSDC ID and the time span (and/or location) of interest. A researcher should also specify why and when the data are needed, the subject of the work, organizational affiliation, and any Government contracts used for performing the study. The NSSDC staff is available to help requesters identify data sets for use.

NSSDC would appreciate receiving copies of all publications resulting from studies in which data supplied by the Data Center have been used. It is further requested that both NSSDC and the original data provider be acknowledged as sources of the data.

Data can be provided in a format or medium other than that used for archiving. For example, magnetic tapes can be reformatted; computer printout or microfilmed listings can be produced from magnetic tape; enlarged paper prints can be provided from data on photographic film and microfilm, etc. NSSDC/WDC-A-R&S will provide the requester with an estimate of the response time and the charge for such requests.

For researchers within the United States, further information may be obtained from:

National Space Science Data Center
Code 633
Goddard Space Flight Center
Greenbelt, MD 20771
Telephone: (301) 286-6695
Telex: 89675 NASCOM GBLT
TWX: 7108289716
SPAN Address: NCF::REQUEST

Researchers residing outside the United States should direct requests for information to the following:

World Data Center A for Rockets and Satellites
Code 630.2
Goddard Space Flight Center
Greenbelt, MD 20771 U.S.A.
Telephone: (301) 286-6695
Telex: 89675 NASCOM GBLT
TWX: 7108289716
SPAN Address: NCF::REQUEST

For access to a menu of information, the Master Directory (MD), which is a limited data directory, and limited data displays such as the Nimbus 7 gridded TOMS ozone values, requesters may use SPAN to log onto the NSSDCA node, with NSSDC as Username. No password is required. NSSDC may also be reached by Telenet; current procedures are available from the NSSDC Network Hotline (301-286-7251). MD is being continually expanded and developed, and allows users to search for useful data sets by several methods.

1.4 DATA ACQUISITION

NSSDC invites members of the scientific community involved in spacecraft investigations to submit data to the Data Center or to provide information about the data sets that they prefer to make accessible themselves. The Data Center assigns a discipline specialist to work with each investigator or science working team to determine the forms of data that are likely to be most useful to the user community obtaining data from NSSDC. Discipline specialists can also help in the preparation of a Project Data Management Plan (PDMP), which is required of all NASA flight projects. Information on PDMPs and data archival procedures can be provided upon request.

DATA SET DESCRIPTIONS

ASTP-APOLLO *****

Data set name - MAGAZINES ON 35-MM COLOR FILM

NSSDC ID 75-066A-00D, 35MM COLOR FILM MAGS.-MISC.EXPS

Time period covered - (N/A)

Quantity of data - 75 FEET OF COLOR POSITIVES

This data set is contained on one reel of 35-mm color film, type 7252. It includes many magazines (CX-18, CI-13 to CI-18, and CI-20), and many experiments are represented. The magazines and the relevant experiments are as follows: CX-18 includes 75-066A-21A (MA-136), CI-13 includes 75-066A-24A (MA-147); CI-14 includes 75-066A-17A (MA-028), 75-066A-21A (MA-136), and 75-066A-24A (MA-147); CI-15 includes 75-066A-17A (MA-028), 75-066A-21A (MA-136), and 75-066A-24A (MA-147); CI-16 includes 75-066A-24A (MA-147); CI-17 includes 75-066A-15A (MA-007); CI-18 includes 75-066A-17A (MA-028), 75-066A-21A (MA-136), and 75-066A-24A (MA-147); and CI-20 includes 75-066A-17A (MA-028), 75-066A-21A (MA-136), 75-066A-23B (MA-161), and 75-066A-24A (MA-147).

Data set name - FILM MAGAZINES OF MISCELLANEOUS EXPERIMENTS

NSSDC ID 75-066A-00E, SCIENCE DEMONSTRATIONS-16MM COLOR

Time period covered - (N/A)

Quantity of data - 1000 FEET OF COLOR POSITIVES

This data set, on one reel of 16-mm color film, type 7252, includes demonstrations of capillary wicking, liquid spreading, and chemical foams in zero gravity. The magazines included are labeled CI-25, CI-26, and CI-27.

Data set name - SPACECRAFT RAW DATA DIGITAL TAPES

NSSDC ID 75-066A-00F, SPACECRAFT DIGITAL TAPES

Time period covered - 07/15/75 TO 07/24/75

Quantity of data - 222 REELS OF TAPE

This data set consists of the Apollo-Soyuz Test Project (ASTP) spacecraft magnetic tapes that were used to generate the experimenter's tapes. They contain the pulse coded modulation (pcm) data in raw form. No ephemeris information and no calibration data are included. These 7-track tapes are written at 800 bpi and in binary mode. The data are in JSC Institutional Data Systems Division (IDSD) serial bit streams (SBS) format. An SBS tape contains a descriptor file and a data file. The descriptor file is omitted from continuation reels; it contains descriptive information used by the IDSD retrieval software and related applications software. It is followed by an end-of-file mark and then the data file. The data file contains the raw telemetered data in pcm counts, associated times, and sync status information. The record content and size varies depending upon data rate. Data quality may be determined by checking the frame sync and time sync status. All data quantities are binary integers unless specified otherwise.

Data set name - APOLLO-SOYUZ DOCKING AND COMMAND SERVICE MODULE EPHEMERIS DATA ON MAGNETIC TAPE

NSSDC ID 75-066A-00G, APOLLO-SOYUZ EPHEMERIS DATA

Time period covered - (N/A)

Quantity of data - 1 REEL OF TAPE

This data set consists of ephemeris data on 1600-bpi, EBCDIC, 9-track magnetic tape, recorded on an IBM 360 computer. Logical records are 80-character card images, and each physical record consists of 62 logical records, for a block size of 4960 characters. Each pair of logical records is one data record containing docking module (dm) and command service module (csm) coordinates of time in seconds from epoch, geodetic latitude and longitude, and altitude in kilometers above the reference ellipsoid. The reference figure for the earth is an ellipsoid of revolution with an equatorial radius of 6378.160 km and a polar radius of 6356.774 km. Altitude is along the normal to the reference ellipsoid.

Data set name - APOLLO-SOYUZ EPHEMERIS DATA ON MAGNETIC TAPE

NSSDC ID 75-066A-00H, EPHEMERIS DATA ON MAG. TAPE

Time period covered - 07/15/75 TO 07/24/75

Quantity of data - 222 REELS OF TAPE

These project-supplied, master experiment support magnetic tapes are stored in the Washington National Records Center (WNRC). They contain all Apollo spacecraft ephemeris, attitudes, sensor pointings, fields-of-view, and other parameters generated in support of ASTP experiments, such as, e.g., sunrise and sunset times, vehicle-sun angle, magnetic field intensity, and l-shell radius. They are Univac 1108 compatible, 7-track, odd parity, 800-bpi density, and binary, with word lengths of 36 bits. Each tape is introduced by seven header records of input data followed by 241-word logical data records. The format of the data record is given in table 7 of the format document. Included in this tape set are "CMC" tapes, which contain the cm downlink telemetry parameters that were required for generating the ASTP experiment support data. One tape in this "CMC" tape group is identified as the telemetry shutter activation tape and contains the times of "shutter open" event for the two MA-136A experiment cameras. In addition, there are two ground radio tracking tapes that include all c-band and s-band observations of the Apollo and Soyuz spacecraft transmitted to the RTCC during the mission. The format document also describes the "CMC" and ground radio tracking tapes.

Data set name - EPHEMERIS DATA ON MICROFILM

NSSDC ID 75-066A-00I, EPHEMERIS DATA ON MICROFILM

Time period covered - 07/16/75 TO 07/24/75

Quantity of data - 103 REELS OF MICROFILM

This project-supplied data set on 16-mm microfilm, is stored in the Washington National Records Center (WNRC). It contains all Apollo spacecraft ephemeris, attitudes, sensor pointings, fields-of-view, and other parameters generated in support of ASTP experiments, such as, e.g., sunrise and sunset times, vehicle-sun angle, magnetic field intensity, and l-shell radius. Each frame contains 12 columns above which are given the date and time of the measurements. The elements in one column identify particular variables, e.g., geographic latitude, and the corresponding elements in the adjacent column are the numerical values of those variables at the time specified in the frame heading.

ASTP-APOLLO, BOWYER
EXTREME ULTRAVIOLET ASTRONOMY

Data set name - EUV DATA ON MAGNETIC TAPE

NSSDC ID 75-066A-01A, EUV DATA ON MAG TAPE

Time period covered - 07/16/75 TO 07/24/75

Quantity of data - 1 REEL OF TAPE

This tape was supplied by the experimenter and is a merged digital tape of the data tapes used for analysis. It is odd parity, 9-track, and was written at 1600 bpi. There are 13 files; each file is the entire contents of an individual data tape, and each file terminates with a file mark. Each file contains a large number of physical records. The first and second physical record on each file are identical; however, these records may contain questionable data. All other physical records contain 30 logical records, each of which contains 18 eight-bit bytes of information. When the experiment was on, logical records were obtained at 0.1-s intervals. The first eight bytes give day and time of the measurement. The detector 1 and 2 outputs (in counts) are given in bytes 15 and 16, respectively. The document distributed with the data describes the instrument operations and provides the calibration curves to convert output from counts to protons per sq cm per a per event.

ASTP-APOLLO, BOWYER
HELIUM GLOW

Data set name - HELIUM GLOW EUV DATA ON MAGNETIC TAPE

ORIGINAL PAGE IS
OF POOR QUALITY

NSSDC ID 75-066A-02A, EUV DATA ON TAPE

Time period covered - 07/16/75 TO 07/24/75

Quantity of data - 1 REEL OF TAPE

These EUV telescope data were generated by an IBM 360 computer onto 9-track, 1600 bpi, binary magnetic tapes. Each data file contains two header records (48 BCD characters) of mission and experiment identification. All other physical records contain 30 logical records of 24 eight-bit bytes of information. The logical records consist of time in days, hours, seconds and milliseconds of day, flag bits, quality reference measurements, helium tank pressure and temperature, current, detector 1-4 count rates, and door bits 1 and 2.

ASTP-APOLLO, EL-BA7
EARTH OBSERVATIONS AND PHOTOGRAPHY

Data set name - EARTH OBSERVATION AND PHOTOS ON 35MM
COLOR FILM

NSSDC ID 75-066A-21A, EARTH OBS + PHOTOS, 35MM COLOR

Time period covered - (N/A)

Quantity of data - 75 FEET OF COLOR POSITIVES

This data set includes magazines CX-18, CI-14, CI-15, CI-18, and CI-20, which are included in data set 75-066A-00D.

Data set name - EARTH OBSERVATION AND PHOTOS ON 70MM
COLOR FILM

NSSDC ID 75-066A-21B, 70MM COLOR FILM

Time period covered - (N/A)

This data set is contained in two rolls of type 5389 color film. It contains magazines CX-06 to CX-14, CX-16, CX-17, CX-19, CX-20, IF-01, IF-02, and CT-02 to CT-06. These photographic data support research in the broad fields of geology, hydrology, and oceanography, as well as observational data pertaining to meteorology.

ASTP-APOLLO, PEPIN
STRATOSPHERIC AEROSOL MEASUREMENT

Data set name - SECOND GENERATION POSITIVES ON 70MM FILM

NSSDC ID 75-066A-19A, SECOND GENERATION POS. 70 MM FILM

Time period covered - (N/A)

These data, contained on 70-mm roll film, type 50-289, are second generation positive copies. These data measure the concentration and vertical distribution of aerosols in the stratosphere. Solar extinction is measured by a photometer operating in the near-infrared region of the spectrum in order to measure the stratospheric constituents and concentration. Measurements were taken while the spacecraft approached sunset or sunrise.

Data set name - PHOTOMETER INTENSITIES VS TIME DATA ON
MAGNETIC TAPE

NSSDC ID 75-066A-19B, PHOTOMETER INTENSITIES VS TIME, TP

Time period covered - 07/26/75 TO 07/26/75

Quantity of data - 1 REEL OF TAPE

These experimenter-supplied photometer intensities as a function of time data are on a magnetic tape created on a CDC 3000 computer. The data are on a 7-track binary tape, at 800 bpi, with two files. The first file is ephemeral information written in CDC 48 bit floating point words, with 243 words per record. The second file contains the intensities as a function of time data. The first two records of the second file are header records containing, in BCD format, mission and experiment information and the date of the run. The remaining records in the file are blocked at 24 to 120-bit logical records per physical record and contain time in integer milliseconds, quality reference measurements 1 and 2, and CI9790 data.

ASTP-APOLLO, VONBUN
GEODYNAMICS

Data set name - GEODYNAMICS ON COLOR FILM

NSSDC ID 75-066A-17A, GEODYNAMICS, 35MM COLOR

Time period covered - (N/A)

Quantity of data - 75 FEET OF COLOR POSITIVES

This data set is contained on magazines CI-14, CI-15, CI-18, and CI-20, which are included in data set 75-066A-00D. The color imagery is ideal to evaluate the technique of tracking a spacecraft by range and range-rate measurement data relayed to a ground station via a communications relay satellite (ATS-6), and to determine any local anomalies of the earth's gravity field. These data are complementary to the Doppler experiment. Some specific attitude orientation will be required to obtain the necessary data.

ATS 3, BRANCHFLOWER
IMAGE DISSECTOR CAMERA (IDC)

Data set name - THE ATS METEOROLOGICAL DATA CATALOG
ON MICROFICHE

NSSDC ID 67-111A-03A, ATS METED DATA CAT ON MICROFICHE

Time period covered - 11/07/67 TO 07/31/69

Quantity of data - 42 CARDS OF B/W MICROFICHE

This data set is contained in vol 2, 3, and 4 of the five-volume publication, "The ATS Meteorological Data Catalog," published by NASA/GSFC that describes and indexes the data from the ATS 1 Spin Scan Cloud Camera (SSCC), the ATS 3 Multicolor Spin Scan Cloud Camera (MSSCC), and the ATS 3 Image Dissector Camera System (IDCS). The catalog also contains orbit information and usually one picture per day (normally full disk taken near local noon) as acquired from the three experiments. The first two volumes of this set serve as a data user's guide for each of the three experiments. In addition to describing each experiment, they also contain explanations of the acquisition, categorization, cataloging, and data archiving processes. The five volumes cover the following time periods: January 1 to June 30, 1967 (vol 1--contains only ATS 1 data); July 1, 1967, to January 31, 1968 (vol 2); February 1 to December 31, 1968 (vol 3); January 1 to July 1969 (vol 4); and August 1, 1969, to May 25, 1970 (vol 5--contains only ATS 3 data).

ATS 3, SUOMI
MULTICOLOR SPIN-SCAN CLOUDCOVER CAMERA
(MSSCC)

Data set name - METEOROLOGICAL DATA CATALOG FOR THE
APPLICATIONS TECHNOLOGY SATELLITES

NSSDC ID 67-111A-01C, METEOROLOGICAL DATA CATALOG

Time period covered - 11/05/67 TO 05/25/70

Quantity of data - 5 BOOKS OR BOUND VOLUMES

This data set is contained in vol 2, 3, 4, and 5 of the five-volume publication "The ATS Meteorological Data Catalog," published by NASA/GSFC, that describes and indexes the data from the ATS 1 Spin Scan Cloud Camera (SSCC), the ATS 3 Multicolor Spin Scan Cloud Camera (MSSCC), and the ATS 3 Image Dissector Camera System (IDCS). The catalog also contains orbit information and usually one picture per day (normally full disk, taken near local noon) as acquired from the three experiments. The first two volumes of this set serve as a data user's guide for each of the three experiments. In addition to describing each experiment, they also contain explanations of the acquisition, categorization, cataloging, and data archiving processes. The five volumes cover the following time periods: January 1 to June 30, 1967 (vol 1--contains only ATS 1 data); July 1, 1967, to January 31, 1968 (vol 2); February 1 to December 31, 1968 (vol 3); January 1 to July 31, 1969 (vol 4); and August 1, 1969, to May 25, 1970 (vol 5--contains only ATS 3 data).

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***** BE-B *****

BE-B, BLUMLE
RADIO FREQUENCY BFACON

Data set name - TOTAL ELECTRON CONTENT DATA ON MICROFILM

NSSDC ID 64-064A-01A, TOTAL ELECTRON CONTENT (MFILM)

Time period covered - 10/13/64 TO 04/17/69

Quantity of data - 4 REELS OF MICROFILM

This data set contains electron content measurements on four reels of 16-mm microfilm. The content was determined from the Faraday rotation rate of BE-B beacon signals received at several observation stations in Germany during 1964 to 1969. Sternwarte, Bochum (latitude 51.43, longitude 7.19), Ionosphaeren-Institut, Breisach (48.05, 7.58), and Max-Planck-Institute, Lindau (51.62, 10.09). The computer printout on microfilm lists the date, orbit number, time, satellite position (latitude, longitude, height), and calculated electron content.

Data set name - TOTAL ELECTRON CONTENT, HARDCOPY

NSSDC ID 64-064A-01B, TOTAL ELECTRON CONTENT (BOOKS)

Time period covered - 10/16/64 TO 12/31/67

Quantity of data - 27 BOOKS OR BOUND VOLUMES

These are published data giving the total ionospheric electron content (TEC) between the satellite and the earth-based recording site. Data are usually normalized to a vertical path through an ionospheric point (IP), where the propagation path intersects the electron maximum (usually taken to be near 350 km). Data are published by various observers at different locations, which include Val Joyeux, France; Florence, Italy; Bangkok, Thailand; Delhi, India; London; Ontario, Canada; and Haifa, Israel. Data presented include date-time, TEC, and location for sub-IP and/or satellite. Observational details are normally included in the text of each volume. The data are available in hard copy at NSSDC for reference. Microfilm, microfiche, or hard copy pages are available to NASA and NASA contract employees. Other interested persons should request these data through the Boulder Data Center, since they are considered to be ground-based observations.

Data set name - LATITUDE VERSUS TOTAL ELECTRON CONTENT
OVER ILLINOIS, MICHIGAN AND MONTANA, MFICHE

NSSDC ID 64-064A-01C, LAT VS TEC PLOTS ON MICROFICHE

Time period covered - 10/21/64 TO 03/17/65

Quantity of data - 4 CARDS OF B/W MICROFICHE

These data have been reduced to units of electron number density per unit of cross section for a vertical path through the ionospheric point. Analysis consists of plotting data for each hour of each season, on one graph. Data for all four seasons for most hours are available for Urbana, Illinois. Spring and summer data for most hours are available for Bozeman, Montana, and Houghton, Michigan. One or more passes, labeled with date and time, appear on each plot. These plots were prepared by satellite program participants and are contained in appendix B of "Latitude Dependence of Ionospheric Electron Content," by Weise and Yeh, and in "Study of Ionospheric Electron Content from Observations at Different Stations," by Youakim and Rao.

BE-B, BRACE
LANGMUIR PROBL

Data set name - TABULATIONS OF ELECTRON DENSITY DATA ON
MICROFILM

NSSDC ID 64-064A-02A, ELECTRON DENSITY (MICROFILM)

Time period covered - 10/10/64 TO 05/31/65

Quantity of data - 1 REEL OF MICROFILM

This analyzed data set, which was received from the experimenter, consists of electron number densities recorded by STADAN stations for periods in which the satellite orbit path

was over any one of 10 stations observing the ionospheric beacon from this satellite. Knowledge of the satellite electron density is very useful for interpretation of beacon data. The experiment operated for 22 s every 3 min. The two 22-s periods occurring nearest a given beacon observing station were analyzed for electron density. The results are presented in tabular form on 35-mm microfilm along with UT, latitude, longitude, and altitude. The data from each month are ordered according to the beacon station over which the data were recorded.

***** BE-C *****

BE-C, BLUMLE
RADIO BEACON

Data set name - TOTAL ELECTRON CONTENT DATA ON MICROFILM

NSSDC ID 65-032A-01A, TOTAL ELECTRON CONTENT (PRINTOUT)

Time period covered - 05/03/65 TO 02/10/68

Quantity of data - 1 REEL OF MICROFILM

This data set contains ionospheric electron content data on one reel of 16-mm microfilm. The content was determined from the Faraday rotation rate of BE-C beacon signals (40.010 MHz) at 30.62 latitude and -96.34 longitude, received by the observing station of the Texas A&M University electrical engineering department during 1965 to 1968. The computer printout on microfilm lists the date, orbit number, time, satellite position (latitude, longitude, height), and calculated electron content.

***** DMSP 5B/F2 *****

DMSP 5B/F2, AFCWC STAFF
SCANNING RADIOMETER (SR)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 72-018A-01A, AURORAL IMAGERY

Time period covered - 06/16/72 TO 02/23/74

Quantity of data - 16 REELS OF MICROFILM

This data set of 35-mm film contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data.

Data set name - NIGHTTIME POLAR IMAGERY ON 35MM MICROFILM

NSSDC ID 72-018A-01B, NIGHTTIME POLAR IMAGERY

Time period covered - 06/16/72 TO 04/30/75

Quantity of data - 16 REELS OF MICROFILM

This data set, on reels of 35-mm film, consists of nighttime visual imagery taken over the polar regions. The film was prepared by the U.S. Air Force Global Weather Central. The data are corrected for altitude and roll variations but are not corrected for small pitch and yaw variations. The data frame width is approximately 3000 km. Data are not gridded, but they can be gridded by the user with ephemeris information and coordinate grids that accompany the data.

***** DMSP 5B/F3 *****

DMSP 5B/F3, AFCWC STAFF
SCANNING RADIOMETER (SR)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 72-089A-01A, AURORAL IMAGERY

Time period covered - 02/01/73 TO 05/31/75

Quantity of data - 3 REELS OF MICROFILM

This data set of 35-mm film, prepared by a U.S. Air Force office in Omaha, Nebraska, contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data.

Data set name - NIGHTTIME POLAR IMAGERY ON 35MM MICROFILM

NSSDC ID 72-089A-01B, NIGHTTIME POLAR IMAGERY

Time period covered - 02/01/73 TO 05/31/75

Quantity of data - 3 REELS OF MICROFILM

This data set, on reels of 35-mm film, consists of nighttime visual imagery taken over the polar regions. The film was prepared by the U.S. Air Force Global Weather Central. The data are corrected for altitude and roll variations but are not corrected for small pitch and yaw variations. The data frame width is approximately 3000 km. Data are not gridded, but they can be gridded by the user with ephemeris information and coordinate grids that accompany the data.

***** DMSP 5B/F4 *****

DMSP 5B/F4, AFCWC STAFF
SCANNING RADIOMETER (SR)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 73-054A-01A, AURORAL IMAGERY, MICROFILM

Time period covered - 09/21/73 TO 04/30/77

Quantity of data - 50 REELS OF MICROFILM

This data set of 35-mm film contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic position of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data.

Data set name - NIGHTTIME POLAR IMAGERY ON 35MM MICROFILM

NSSDC ID 73-054A-01B, NIGHTTIME POLAR IMAGERY

Time period covered - 09/21/73 TO 04/30/77

Quantity of data - 50 REELS OF MICROFILM

This data set, on reels of 35-mm film, consists of nighttime visual imagery taken over the polar regions. The film was prepared by the U.S. Air Force Global Weather Central. The data are corrected for altitude and roll variations. The data frame width is approximately 3000 km. Data are not gridded, but they can be gridded by the user with ephemeris information and coordinate grids that accompany the data.

***** DMSP 5B/F5 *****

DMSP 5B/F5, AFCWC STAFF
SCANNING RADIOMETER (SR)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 74-015A-01A, AURORAL IMAGERY, MFLM

Time period covered - 03/23/74 TO 05/07/76

Quantity of data - 36 REELS OF MICROFILM

This data set of 35-mm film contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data.

Data set name - NIGHTTIME POLAR IMAGERY ON 35MM MICROFILM

NSSDC ID 74-015A-01B, NIGHTTIME POLAR IMAGERY

Time period covered - 03/23/74 TO 04/30/75

Quantity of data - 31 REELS OF MICROFILM

This data set, on reels of 35-mm film, consists of nighttime visual imagery taken over the polar regions. The film was prepared by the U.S. Air Force Global Weather Central. The data are corrected for altitude and roll variations but are not corrected for small pitch and yaw variations. The data frame width is approximately 3000 km. Data are not gridded, but they can be gridded by the user with ephemeris information and coordinate grids that accompany the data.

***** DMSP 5C/F1 *****

DMSP 5C/F1, AFCWC STAFF
SCANNING RADIOMETER (SR)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 74-063A-01A, AURORAL IMAGERY, MFLM

Time period covered - 10/01/74 TO 11/28/74

Quantity of data - 5 REELS OF MICROFILM

This data set, on reels of 35-mm film, contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data.

Data set name - NIGHTTIME POLAR IMAGERY ON 35MM MICROFILM

NSSDC ID 74-063A-01B, NIGHTTIME POLAR IMAGERY

Time period covered - 10/01/74 TO 11/28/74

Quantity of data - 4 REELS OF MICROFILM

This data set, on reels of 35-mm film, consists of nighttime visual imagery taken over the polar regions. The film was prepared by the U.S. Air Force Global Weather Central. The data are corrected for altitude and roll variations but are not corrected for small pitch and yaw variations. The data frame width is approximately 3000 km. Data are not gridded, but they can be gridded by the user with ephemeris information and coordinate grids that accompany the data.

***** DMSP 5C/F2 *****

DMSP 5C/F2, AFCWC STAFF
4 CHANNEL SCANNING RADIOMETER (SR)

Data set name - AURORAL IMAGERY ON MICROFILM

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NSSDC ID 75-043A-01A, AURORAL IMAGERY, MFLM

Time period covered - 05/30/75 TO 07/31/77

Quantity of data - 34 REELS OF MICROFILM

This data set, on reels of 35-mm film, contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data

Data set name - NIGHTTIME POLAR IMAGERY ON 35MM MICROFILM

NSSDC ID 75-043A-01B, NIGHTTIME POLAR IMAGERY

Time period covered - 05/30/75 TO 07/31/77

Quantity of data - 34 REELS OF MICROFILM

This data set, on reels of 35-mm film, consists of nighttime visual imagery taken over the polar regions. The film was prepared by the U.S. Air Force Global Weather Central. The data are corrected for altitude and roll variations but are not corrected for small pitch and yaw variations. The data frame width is approximately 3000 km. Data are not gridded, but they can be gridded by the user with ephemeris information and coordinate grids that accompany the data

***** DMSP 5D-1/F1 *****

DMSP 5D-1/F1, AFGWC STAFF
OPERATIONAL LINESCAN SYSTEM (OLS)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 76-091A-01A, AURORAL IMAGERY ON MICROFILM

Time period covered - 05/01/77 TO 09/30/79

Quantity of data - 43 REELS OF MICROFILM

This data set, on reels of 35-mm film, contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data. Data are arranged chronologically, with images intermixed from all four DMSP block 5D-1 satellites.

DMSP 5D-1/F1, AFGWC STAFF
MULTICHANNEL FILTER RADIOMETER (SSH)

Data set name - TOTAL OZONE AND CALIBRATED RADIANCE DATA

NSSDC ID 76-091A-02A, TOTAL OZONE + CALIBRATED RADIANCE

Time period covered - 03/25/77 TO 07/23/77

Quantity of data - 13 REELS OF TAPE

This data set is contained on 6250-bpi, 9-track, binary tapes. The multichannel filter radiometer (MFR) was a scanning instrument carried on the DMSP satellite and was used to calibrate the total column ozone globally. The infrared MFR sensors made both daytime and nighttime observations, thus permitting a possible 67,500 observations every 24 h by satellite. The MFR instruments were unique in that they each had a channel for measurements of upwelling radiation in the 9.6 micrometer band of ozone. Uncalibrated radiance data were calibrated and mapped to earth coordinates at Lawrence Livermore National Laboratory (LLNL), thus deriving a total column ozone. Both the ozone and calibrated radiance data were placed in a computer data base called Satellite Ozone Analysis Center (SOAC). The data base was constructed on a VAX 11/780 computer with a VMS operating system using the FRAMIS code, a relational data base manager. The data base contains the MFR total ozone calibrated radiance data from all four DMSP block 5D-1 satellites. It can be implemented on any VAX system with a VMS operating system, provided that the system has sufficient disk space to hold one day of data. Similar data sets for DMSP are in 77-044A-02A, 78-042A-02A, and 79-050A-02A.

Data set name - MFR TOTAL OZONE GRID POINT DATA ON
MAGNETIC TAPE

NSSDC ID 76-091A-02B, MFR TOTAL OZONE GRID POINT DATA

Time period covered - 03/25/77 TO 07/23/77

Quantity of data - 2 REELS OF TAPE

The gridded ozone data are archived on two 6250-bpi tapes in blocks of 9380 ASCII characters. Each block contains 20 records; each record contains 469 characters. An ozone grid point value is expressed to the nearest tenth of a m-atm-cm. Each file on a tape represents the gridded data for 1 calendar day beginning at 0000Z Greenwich Mean Time (GMT). A file may contain as many as four grids, one for each of the DMSP block 5D-1 satellites. The grid in each hemisphere is a 67 x 67 rectangular matrix of points superposed on a polar stereographic map base.

***** DMSP 5D-1/F2 *****

DMSP 5D-1/F2, AFGWC STAFF
OPERATIONAL LINESCAN SYSTEM (OLS)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 77-044A-01A, AURORAL IMAGERY ON MICROFILM

Time period covered - 08/01/77 TO 06/05/78

Quantity of data - 37 REELS OF MICROFILM

This data set, on reels of microfilm, contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data.

DMSP 5D-1/F2, AFGWC STAFF
MULTICHANNEL FILTER RADIOMETER (SSH)

Data set name - TOTAL OZONE AND CALIBRATED RADIANCE DATA

NSSDC ID 77-044A-02A, TOTAL OZONE + CALIBRATED RADIANCE

Time period covered - 07/13/77 TO 02/16/80

Quantity of data - 97 REELS OF TAPE

This data set is contained on 6250-bpi, 9-track, binary tapes. The multichannel filter radiometer (MFR) was a scanning instrument carried on the DMSP satellite and was used to calculate the total column ozone globally. The infrared MFR sensors made both daytime and nighttime observations, thus permitting a possible 67,000 observations every 24 h by each satellite. The MFR instruments were unique in that they had a channel for measurements of upwelling radiation in the 9.6 micrometer band of ozone. Uncalibrated radiance data were calibrated and mapped to earth coordinates at Lawrence Livermore National Laboratory (LLNL), thus deriving a total column ozone. Both the ozone and calibrated radiance data were placed in a computer data base called Satellite Ozone Analysis Center (SOAC). The data base was constructed on a VAX computer with a VMS operating system using the FRAMIS code, a relational data base manager. The data base contains the MFR total ozone calibrated radiance data from all four DMSP block 5D-1 satellites. It can be implemented on any VAX system with a VMS operating system, providing that the system has sufficient disk space to hold 1 day of data. Similar data sets for DMSP are in 76-091A-02A, 78-042A-02A, and 79-050A-02A.

Data set name - MFR TOTAL OZONE GRID POINT DATA ON
MAGNETIC TAPE

NSSDC ID 77-044A-02B, MFR TOTAL OZONE GRID POINT DATA

Time period covered - 07/13/77 TO 02/16/80

Quantity of data - 2 REELS OF TAPE

The gridded ozone data are archived on two 6250-bpi tapes in blocks of 9380 ASCII characters, with each block containing 20 records. An ozone grid point value is expressed to the nearest tenth of a m-atm-cm. Each file or a tape represents the gridded data for one calendar day, beginning at 000Z

Greenwich Mean Time (GMT). A file may contain as many as four grids, one for each of the DMSP block 5D-1 satellites. The grid in each hemisphere is a 67 x 67 rectangular matrix of points superposed on a polar stereographic map base.

***** DMSP 5D-1/F3 *****

DMSP 5D-1/F3, AFGWC STAFF
OPERATIONAL LINESCAN SYSTEM (OLS)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 78-042A-01A, AURORAL IMAGERY ON MICROFILM

Time period covered - 05/20/78 TO 09/30/79

Quantity of data - 26 REELS OF MICROFILM

This data set, on reels of 35-mm film, contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 3000 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data.

DMSP 5D-1/F3, AFGWC STAFF
MULTICHANNEL FILTER RADIOMETER (SSH)

Data set name - TOTAL OZONE AND CALIBRATED RADIANCE DATA

NSSDC ID 78-042A-02A, TOTAL OZONE + CALIBRATED RADIANCE

Time period covered - 07/23/78 TO 02/05/80

Quantity of data - 56 REELS OF TAPE

This data set is contained on 6250-bpi, 9-track, binary tapes. The multichannel filter radiometer (MFR) was a scanning instrument carried on a DMSP satellite and used to calculate the total column ozone globally. The infrared MFR sensors made both daytime and nighttime observations, thus permitting a possible 67,500 observations every 24 h by each satellite. The MFR instruments were unique in that they each had a channel for measurements of upwelling radiation in the 9.6 micrometer band of ozone. Uncalibrated radiance data were calibrated and mapped to earth coordinates at Lawrence Livermore National Laboratory, thus deriving a total column ozone. Both the ozone and calibrated radiance data were placed in a computer data base called SOAC (Satellite Ozone Analysis Center). The data base was constructed on a VAX 11/780 computer with a VMS operating system using the FRAMIS code, a relational data base manager. The data base contains the MFR total ozone calibrated radiance data from all four DMSP block 5D-1 satellites. It can be implemented on any VAX system with a VMS operating system, provided that the system has sufficient disk space to hold 1 day of data. Similar data sets for DMSP are in 76-091A-02A, 77-044A-02A, and 79-050A-02A.

Data set name - MFR TOTAL OZONE GRID POINT DATA ON
MAGNETIC TAPE

NSSDC ID 78-042A-02B, MFR TOTAL OZONE GRID POINT DATA

Time period covered - 07/23/78 TO 02/05/80

Quantity of data - 2 REELS OF TAPE

The gridded ozone data are archived on two 6250-bpi tapes in blocks of 9380 ASCII characters, with each block containing 20 records of 469 characters. An ozone grid point value is expressed to the nearest tenth of a m-atm-cm. Each file on a tape represents the gridded data for 1 calendar day, beginning at 0000Z Greenwich Mean Time (GMT). A file may contain as many as four grids, one for each of the DMSP block 5D-1 satellites. The grid in each hemisphere is a 67 x 67 rectangular matrix of points superposed on a polar stereographic map base.

***** DMSP 5D-1/F4 *****

DMSP 5D-1/F4, AFGWC STAFF
OPERATIONAL LINESCAN SYSTEM (OLS)

Data set name - AURORAL IMAGERY ON MICROFILM

NSSDC ID 79-050A-01A, AURORAL IMAGERY ON MICROFILM

Time period covered - 07/01/79 TO 09/30/79

Quantity of data - 9 REELS OF MICROFILM

This data set, on nine reels of microfilm, contains auroral images that were telemetered from the satellite sensors. The data are corrected for roll and altitude variations but are not corrected for small pitch and yaw variations. The data frame width is about 30 km. The geographic positions of the auroral forms can be determined from the ephemeris information and coordinate grids accompanying the data.

DMSP 5D-1/F4, AFGWC STAFF
MULTICHANNEL FILTER RADIOMETER (SSH)

Data set name - TOTAL OZONE AND CALIBRATED RADIANCE DATA

NSSDC ID 79-050A-02A, TOTAL OZONE + CALIBRATED RADIANCE

Time period covered - 06/17/79 TO 02/06/80

Quantity of data - 21 REELS OF TAPE

This data set is contained on 6250-bpi, 9-track, binary tapes from a VAX computer. The multichannel filter radiometer (MFR) was a scanning instrument carried on the DMSP satellite and was used to calculate the total column ozone globally. The infrared MFR sensors made both daytime and nighttime observations, thus permitting a possible 67,500 observations every 24 h by each satellite. The MFR instruments were unique in that they each had a channel for measurements of upwelling radiation in the 9.6 micrometer band of ozone. Uncalibrated radiance data were calibrated and mapped to earth coordinates at Lawrence Livermore National Laboratory (LLNL), thus deriving a total column ozone. Both the ozone and calibrated radiance data were placed in a computer data base called SOAC (Satellite Ozone Analysis Center). The data base was constructed on a VAX 11/780 computer with a VMS operating system using the FRAMIS code, a relational data base manager. The data base contains the MFR total ozone calibrated radiance data from all four DMSP block 5D-1 satellites. It can be implemented on any VAX system with a VMS operating system, provided that the system has sufficient disk space to hold 1 day of data. Similar data sets for DMSP are in 76-091A-02A, 77-044A-02A, and 78-042A-02A.

Data set name - MFR TOTAL OZONE GRID POINT DATA ON
MAGNETIC TAPE

NSSDC ID 79-050A-02B, MFR TOTAL OZONE GRID POINT DATA

Time period covered - 06/17/79 TO 02/06/80

Quantity of data - 2 REELS OF TAPE

The gridded ozone data are archived on two 6250-bpi tapes in blocks of 9380 ASCII characters, with each block containing 20 records of 469 characters. An ozone grid point value is expressed to the nearest tenth of a m-atm-cm. Each file on a tape represents the gridded data for 1 calendar day, beginning at 0000Z Greenwich Mean Time (GMT). A file may contain as many as four grids, one for each of the DMSP block 5D-1 satellites. The grid in each hemisphere is a 67 x 67 rectangular matrix of points superposed on a polar stereographic map base.

***** ECHO 2 *****

ECHO 2, JACCHIA
SATELLITE DRAG ATMOSPHERIC DENSITY

Data set name - SATELLITE DRAG ATMOSPHERIC DENSITY VALUES

NSSDC ID 64-004A-03A, ATMOS DRAG DENSITY TABLES

Time period covered - 01/31/64 TO 06/05/69

Quantity of data - 6 CARDS OF B/W MICROFICHE

Atmospheric density values computed from Echo 2 drag data are contained in the Smithsonian Institution Astrophysical Observatory (SAO) Special Report no. 348. These density values were computed for a standard height of 1130 km and cover the time period between January 31, 1964, and June 5, 1969. The

data are primarily in tabular form, with some summary graphs for comparing changes in density as a function of temperature (diurnal and semiannual means), 10.7-cm solar flux, and daily geomagnetic index. The tabulated density values are listed chronologically. Also included in these tables are the observed rate of change of anomalistic period, acceleration due to solar radiation pressure, perigee height, the difference in right ascension between spacecraft at perigee and the sun, the difference in declination between perigee and the sun, and the nighttime temperature computed from the perigee value by use of Jacchia's model of diurnal temperature variation

***** EDLE 1 *****

EDLE 1, BANDEFN
UPPER ATMOSPHERE WINDS AND WEATHER DATA
RELAY SYSTEM

Data set name - RAW TEMPERATURE, PRESSURE AND LOCATION
DATA NEAR 200 MB

NSSDC ID 71-071A-01A, RAW 'STATE' AND LOC. DATA TAPE

Time period covered - 08/27/71 TO 07/04/72

Quantity of data - 1 REEL OF TAPE

The EDLE raw temperature, pressure, and location data set was obtained from the experimenter and consists of an 800-bpi, 7-track, BCD tape generated on a CDC 6600 computer. The data are arranged sequentially by orbit. Data from each orbit are contained in a single record and consist of a heading giving the orbit number, the number of balloons contacted, and a control number. Following the heading, the balloon number, date of observation, location, and ambient temperature and pressure are listed. A maximum of 25 balloon contacts may appear in a single record. Empty records with no balloon contacts have been omitted. These data were obtained from balloons near 200 mb and are for the region between 30 deg S and 60 deg S. The upper level wind speed and direction can be generated from these data by comparing individual balloon locations obtained from successive orbits. Because of errors in location data, a few of which are extremely large, about 1% of such derived wind values could be erroneous. Extremely high wind speeds should be discarded or closely examined by the user. High wind values on November 4, 1971, are particularly questionable.

***** ERBS *****

ERBS, BARKSTROM
EARTH RADIATION BUDGET EXPERIMENT (ERBE)

Data set name - RAW ARCHIVE TAPE (RAT) IMAGES ON OPTICAL
DISK

NSSDC ID 84-108B-01B, RAW ARCH TP(RAT) IMAGES ON OP DISK

Time period covered - 10/25/84 TO 07/31/87

Quantity of data - 7 DISKS

This raw data set was supplied by the ERBE science team as tape images on 12-in. WORM optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains scanner and nonscanner raw radiometric counts. It also contains telemetry, ephemeris, and attitude data merged together sequentially by time. The scanner measurements are obtained from three detectors that scan the earth perpendicular to satellite ground track from horizon to horizon in three spectral ranges: total (0.2 to 50 micrometers), shortwave (0.2 to 5.0 micrometers), and longwave (5.0 to 50 micrometers). Each scan lasts 4 s and covers a hexagonal IFOV of 3 deg by 4.5 deg. The nonscanner measurements are obtained from four earth-viewing channels and a solar monitor. The earth-viewing channels provide total waveband radiation and shortwave radiation data in two spatial resolutions: a horizon-to-horizon view (WFOV), approximately 135 deg, and a view limited to 10 deg or 1000 km (MFOV). Data measured by the solar monitor are total radiation from the sun. A set of nonscanner measurements is made once every 0.8 s, with a time gap of 0.1 s in between. Earth locations of the field-of-view are provided for all radiometric measurements. Additional information includes the time of the record; spacecraft position, velocity, and attitude data; sun position data; housekeeping data in both counts and converted values; and a complete set of radiometric, geometric, and status flags describing the ERBE instruments. These data are grouped into 16-s records, with one tape per day and one optical disk per month.

Data set name - PROCESSED ARCHIVE TAPE (PAT) IMAGES ON
OPTICAL DISK

NSSDC ID 84-108B-01C, PROC ARCH TP(PAT) IMAGES ON OP DK

Time period covered - 11/01/84 TO 07/31/87

Quantity of data - 8 DISKS

This set of earth radiances was supplied by the ERBE science team as tape images on 12-in. WORM optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. The data set contains scanner and nonscanner radiometric and unfiltered measurements, viewing angles at the top of the atmosphere, and estimates of the radiant exitance based on these measurements. The time, spacecraft position, velocity vectors, sun position, and flags are also given for each file, which contains 1 day's worth of data. There is one optical disk per month.

Data set name - TOTAL SOLAR IRRADIANCE ON HARDCOPY

NSSDC ID 84-108B-01D, TOTAL SOLAR IRRADIANCE

Time period covered - 03/01/85 TO 10/31/86

Quantity of data - 5 PAGES OF UNBOUND HARDCOPY

This set of total solar irradiance data was supplied by the experimenter team to NASA's Climate Data System on hard copy. The solar constants were measured by the solar monitor (0.2-50 micrometers) every 2 weeks during periods of solar calibration of the earth-viewing instruments. The measurements are normalized to one astronomical unit and corrected for any off-axis positioning of the sun. Accuracy is better than 0.5%. The data set is available on line in Common Data Format (CDF). This data set is collocated with the total solar irradiance data from NOAA 9 (NSSDC ID 84-123A-05D).

Data set name - SOLAR INCIDENCE (S2) DATA ON OPTICAL
DISK

NSSDC ID 84-108B-01E, SOLAR INCIDENCE (S-2) ON OP DISK

Time period covered - 11/01/84 TO 11/30/84

Quantity of data - 3 DISKS

This set of solar data was supplied by the ERBE science team as tape images on 12-in. WORM optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains radiometric measurements in counts that were taken by the solar monitor channel of the nonscanner instrument during each 20-min solar calibration period. Besides the radiometric data, there are also nonscanner housekeeping data in counts and engineering units, the solar monitor cone angle, and flags. There may be up to four measurement periods per month, and one tape contains 1 mo of data. This data set is archived on the Processed Archive Tape (PAT) optical disks of the month.

Data set name - GRIDDED EARTH RADIATION BUDGET (S-4) DATA
ON OPTICAL DISK

NSSDC ID 84-108B-01F, GRIDDED EARTH RAD BUDGET DD (S-4)

Time period covered - 11/01/84 TO 10/31/86

Quantity of data - 5 DISKS

This set of earth radiation budget data was supplied by the ERBE science team as tape images on 12-in. WORM optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains averages of estimates of longwave, shortwave, and net radiant exitance at the top of the atmosphere and albedo. One set of estimates includes all narrow-field-of-view (NFOV) scanner measurements. The second set contains only those measurements identified as viewing clear sky areas. Four more sets of estimates contain nonscanner measurements (MFOV and WFOV) that are reduced with both the shape factor technique and the numerical filter technique. There are four types of spatial averaging: 2.5 deg, 5.0 deg, 10.0 deg regions and zones, and global averaging. There are also three different time periods of averaging: daily, monthly, and monthly hourly. One tape contains 1 mo of data from the ERBS, spacecraft, or from combined spacecraft (ERBS, NOAA 9, and NOAA 10). This data set is archived on the last Processed Archive Tape (PAT) optical disk of the month.

Data set name - S-9 SCANNER EARTH RADIANT EXITANCE +
ALBEDO DATA

NSSDC ID 84-108B-01G, SCAN EARTH(S9)RAD EXITANCE+ALBEDO

Time period covered - 11/01/84 TO 10/31/86

Quantity of data - 5 DISKS

This set of earth radiation budget data was supplied by the ERBE science team as tape images on 12-in. WORM optical disks that were created on Optimem drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains daily, monthly hourly, and monthly averages of longwave and shortwave radiant exitance at the top of the atmosphere and albedo. The parameters are derived from the scanner measurements and are spatially averaged for 2.5-deg regions. There is also statistical information and scene information, i.e., cloud condition. Similar parameters are determined for those scanner measurements that were identified as viewing clear sky areas. One month of data from the ERBS spacecraft or from combined spacecraft (ERBS, NOAA 9, and NOAA 10) are contained on 1-17 tapes. This data set is archived on the last Processed Archive Tape (PAT) optical disk of the month.

Data set name - NONSCANNER EARTH RADIANT EXITANCE +
ALBEDO DATA

NSSDC ID 84-108B-01H, N S EARTH(S10)RAD EXITANCE+ALBEDO

Time period covered - 11/01/84 TO 10/31/86

Quantity of data - 5 DISKS

This set of earth radiation budget data was supplied by the ERBE science team as tape images on 12-in. WORM optical disks that were created on Optimem drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains daily, monthly hourly, and monthly averages of longwave and shortwave radiant exitance at the top of the atmosphere and albedo. The parameters are derived from the nonscanner measurements by the shape factor (SF) technique and the numerical filter (NF) technique. The SF data are collected into 10-deg regions and the NF data are collected into 5-deg regions. Similar to the scanner data set (S-9; NSSDC ID 84-108B-01G), there is also statistical and scene information, i.e., cloud condition. However, there are no parameters calculated for clear sky areas. One month of data from the ERBS spacecraft or from combined spacecraft (ERBS, NOAA 9, and NOAA 10) are contained on four tapes. This data set is archived on the last Processed Archive Tape (PAT) optical disk of the month.

ERBS, MCCORMICK
STRATOSPHERIC AEROSOL AND GAS (SAGE)

Data set name - METEOROLOGICAL, EPHEMERIS, RAW DATA
ARCHIVAL TAPE (MERDAT)

NSSDC ID 84-108B-02A, MET, EPHEM, RAW ARCH TAPE (MERDAT)

Time period covered - 11/01/84 TO 05/31/89

Quantity of data - 109 REELS OF TAPE

This data set contains unprocessed solar radiance data that were generated on a CDC Cyber computer onto 6250-bpi magnetic tapes in 60-bit floating point numbers. Telemetry science data measured between 0.385 and 1.0 micrometer from cloud top to 150 km are grouped by spacecraft sunrise and sunset events. Ephemeris data and meteorological data such as pressure, temperature, and density are also included. Supplied by the experimenter, each tape (60% full) contains 15 days of data. This data set is not expected to be of much value to secondary investigators.

Data set name - OZONE NUMBER DENSITY AND MIXING RATIO
PROFILE TAPES

NSSDC ID 84-108B-02B, OZONE NO. DENSITY+MIX RATIO PROFIL

Time period covered - 10/24/84 TO 11/30/88

Quantity of data - 4 REELS OF TAPE

This data set contains profiles of ozone density number and ozone volume mixing ratio on one 6250-bpi tape per year in CDC 60-bit format. The profiles are inverted from solar irradiances measured at seven wavelengths (0.385 to 1.02 micrometers) during the Earth Radiation Budget Satellite (ERBS)

sunrise and sunset. There are 15 sunrise and sunset events per day, with each event sweeping over various latitude ranges (from 80 deg N. to 80 deg S. during a year) and separated by 24 deg longitude. The vertical ozone profiles cover from cloud tops to 55 km at 1-km resolution, and the uncertainty in the value is +/- 10%. The first year (1985) tape includes October and November 1984 profiles. Subsequent tapes contain data starting with December and ending with November of the following year.

Data set name - SAGE II AEROSOL PROFILE ARCHIVAL DATA ON
MAGNETIC TAPE

NSSDC ID 84-108B-02C, SAGE II AEROSOL PROFIL ARCH. TAPE

Time period covered - 10/05/84 TO 11/30/88

Quantity of data - 4 REELS OF TAPE

This data set contains extinction profiles of stratospheric aerosols on one 6250-bpi tape per year in CDC 60-bit format. The profiles are inverted from solar irradiances measured at four wavelengths (0.385, 0.453, 0.525, and 1.02 micrometers) during the Earth Radiation Budget Satellite (ERBS) sunrise and sunset. There are 15 sunrise and sunset events per day, with each event sweeping over various latitude ranges (from 80 deg N. to 80 deg S. during a year) and separated by 24 deg longitude. The vertical aerosol profiles cover from cloud tops to 45 km at 1-km resolution, and the uncertainty in the value is +/- 10% from cloud tops to 20 km. The first year (1985) tape includes October and November 1984 profiles. Subsequent tapes contain data starting with December and ending with November of the following year.

***** GEMINI 5 *****

GEMINI 5, NEY
ZODIACAL LIGHT PHOTOGRAPHY

Data set name - ZODIACAL LIGHT PHOTOGRAPHY ON 35-MM FILM

NSSDC ID 65-068A-01A, ZODIACAL LIGHT PHOTOGRAPHY

Time period covered - 08/21/65 TO 08/29/65

Quantity of data - 1 B/W NEGATIVE FRAME

This data set consists of 35-mm TRI-X negatives of the 16 exposures made on Gemini 5 and is available on one reel of film, together with zodiacal light photography from Gemini 9 and 10. The exposures made on this flight show airglow, zodiacal light, star fields, and apparent gegenschein. For frame numbers and a brief index to the photographs, see NSSDC 70-08, "Descriptive Index to Gemini Zodiacal Light Photography."

***** GEMINI 9 *****

GEMINI 9, NEY
ZODIACAL LIGHT PHOTOGRAPHY

Data set name - ZODIACAL LIGHT PHOTOGRAPHY ON 35-MM FILM

NSSDC ID 66-047A-01A, ZODIACAL LIGHT PHOTOGRAPHY

Time period covered - 06/03/66 TO 06/06/66

Quantity of data - 1 B/W NEGATIVE FRAME

This data set consists of 35-mm TRI-X negatives of the 17 exposures made on Gemini 9 and is available on one reel of film, together with zodiacal light photography from Gemini 5 and 10. Good exposures were made showing airglow, star fields, zodiacal light, and twilight. For frame numbers and a brief index to the photographs, see NSSDC 70-08, "Descriptive Index to Gemini Zodiacal Light Photography."

***** GEMINI 10 *****

GEMINI 10, NEY
ZODIACAL LIGHT PHOTOGRAPHY

Data set name - ZODIACAL LIGHT PHOTOGRAPHY ON 35-MM FILM

NSSDC ID 66-066A-01A, ZODIACAL LIGHT PHOTOGRAPHY

Time period covered - 07/18/66 TO 07/21/66

This data set consists of 35-mm TRI-X negatives of the 20 exposures made on Gemini 10 and is available on film, together with zodiacal light photography from Gemini 5 and 9. Picture quality is poorer than for the previous missions because the spacecraft windows were dirty, and the film was only half as sensitive as that used on the earlier flights. For frame numbers and a brief index to the photographs, see NSSDC 70-08, "Descriptive Index to Gemini Zodiacal Light Photography."

***** GOES 1 *****

GOES 1, NESDIS STAFF
VISIBLE INFRARED SPIN-SCAN RADIOMETER
(VISSR)

Data set name - EXPERIMENTER HISTORY TAPES - VISSR DATA
IN DIGITAL FORMAT ON MAGNETIC TAPE

NSSDC ID 75-100A-01A, EHT - VISSR DIGITAL DATA TAPES

Time period covered - 04/16/76 TO 05/29/77

Quantity of data - 285 REELS OF TAPE

This set of radiances was prepared by the experimenter's office and is available on 9-track, 1600-bpi, binary magnetic tapes known as the Experimenter History Tapes (EHT). It contains, in image sections, radiances that were measured at visible (0.55 to 0.70 micrometer) and IR (10.5 to 12.6 micrometer) wavelengths with spatial resolutions of 0.9 and 8 km, respectively. There are also time and location, orbit, attitude, and telemetry information. The EHT format is presented in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

Data set name - VISIBLE IMAGERY ON 70 MM FILM

NSSDC ID 75-100A-01B, VISSR VISIBLE IMAGERY, 70MM FILM

Time period covered - 04/11/76 TO 10/28/76

Quantity of data - 1701 B/W NEGATIVE FRAMES

This set of visible imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, and 3) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - INFRARED IMAGERY ON 70 MM FILM

NSSDC ID 75-100A-01C, VISSR IR IMAGERY, 70MM FILM

Time period covered - 04/11/76 TO 10/28/76

Quantity of data - 1890 B/W NEGATIVE FRAMES

This set of IR imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination

of the following options: 1) contrast enhancement, 2) image sectorization, 3) full-earth or sector imagery, 4) 1/4-size imagery, and 5) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - AOIPS IR AND VISIBLE IMAGERY DIGITAL
DATA TAPES

NSSDC ID 75-100A-01D, VISSR IR/VIS AOIPS IMAGE TAPES

Time period covered - 07/19/75 TO 06/11/78

Quantity of data - 4602 REELS OF TAPE

This set of radiance temperatures was prepared by the experimenter's office and is available on 9-track, 1600-bpi, binary magnetic tapes in the Atmospheric and Oceanographic Image Processing System (AOIPS) format. Each tape contains up to four data files: a visible (0.55- to 0.70-micrometer) image data file, an IR (10.5- to 12.6-micrometer) image data file, an IR grid data file, and a calibration data file. Both the visible and infrared data cover from pole to pole, from 65 deg W. to 155 deg E. The resolutions are 0.9 km and 8 km, respectively. The AOIPS format is described in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

Data set name - VISIBLE INFRARED SPIN-SCAN RADIOMETER
IDAMS VISIBLE AND IR IMAGE DATA ON TAPE

NSSDC ID 75-100A-01E, IDAMS VISIBLE + IR IMAGE DATA, TP

Time period covered - 01/26/76 TO 02/02/76

Quantity of data - 4 REELS OF TAPE

This set of radiance temperatures was prepared by the experimenter's office and is available on 7-track, 800-bpi, binary magnetic tapes in the Image Display and Manipulation System (IDAMS) format. Each tape contains up to 4000 image records in brightness temperatures and has orbit/telemetry information also. The tapes were used to generate 70-mm film products but were subsequently replaced by the Atmospheric and Oceanographic Image Processing System (AOIPS) format data. More description of these data may be found in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

***** GOES 2 *****

GOES 2, NESDIS STAFF
VISIBLE-INFRARED SPIN-SCAN RADIOMETER
(VISSR)

Data set name - AOIPS IR AND VISIBLE IMAGE DATA ON TAPE

NSSDC ID 77-048A-01A, AOIPS IR + VISIBLE IMAGE DATA

Time period covered - 12/07/77 TO 03/05/78

Quantity of data - 2912 REELS OF TAPE

This set of radiance temperatures was prepared by the experimenter's office and is available on 9-track, 1600-bpi, binary magnetic tapes in the Atmospheric and Oceanographic Image Processing System (AOIPS) format. Each tape contains up to four data files: a visible (0.55- to 0.70-micrometer) image data file, an IR (10.5- to 12.6-micrometer) image data file, an IR grid data file, and a calibration data file. Both the visible and infrared data cover from pole to pole, from 65 deg W. to 155 deg E. The resolutions are 0.9 km and 8 km, respectively. The AOIPS format is described in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

Data set name - VISSR VISIBLE IMAGERY ON 70MM FILM

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NSSDC ID 77-048A-018, VISSR VIS IMAGERY ON 70MM FILM

Time period covered - 01/03/79 TO 02/03/79

Quantity of data - 232 B/W NEGATIVE FRAMES

This set of visible imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, and 3) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - VISSR INFRARED IMAGERY ON 70MM FILM

NSSDC ID 77-048A-01C, VISSR IR IMAGERY ON 70MM FILM

Time period covered - 01/03/79 TO 01/03/79

Quantity of data - 131 B/W NEGATIVE FRAMES

This set of IR imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, 3) full-earth or sector imagery, 4) 1/4-size imagery, and 5) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

***** GOES 3 *****

GOES 3, NESDIS STAFF
VISIBLE INFRARED SPIN-SCAN RADIOMETER
(VISSR)

Data set name - VISSR INFRARED IMAGERY ON 70MM FILM

NSSDC ID 78-062A-01A, VISSR IR IMAGERY ON 70MM FILM

Time period covered - 05/02/79 TO 06/05/79

Quantity of data - 265 B/W NEGATIVE FRAMES

This set of IR imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, 3) full-earth or sector imagery, 4) 1/4-size imagery, and 5) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - VISSR VISIBLE IMAGERY ON 70MM FILM

NSSDC ID 78-062A-01B, VISSR VIS IMAGERY ON 70MM FILM

Time period covered - 05/20/79 TO 06/08/79

Quantity of data - 296 B/W NEGATIVE FRAMES

This set of visible imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, and 3) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels.

Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - ADIPS INFRARED AND VISIBLE SPIN-SCAN
RADIOMETER IMAGE DATA ON MAGNETIC TAPE

NSSDC ID 78-062A-01C, ADIPS IR + VISIBLE IMAGE DATA

Time period covered - 06/11/78 TO 05/02/79

Quantity of data - 618 REELS OF TAPE

This set of radiance temperatures was prepared by the experimenter's office and is available on 9-track, 1600-bpi, binary magnetic tapes in the Atmospheric and Oceanographic Image Processing System (ADIPS) format. Each tape contains up to four data files: a visible (0.55- to 0.70-micrometer) image data file, an IR (10.5- to 12.6-micrometer) image data file, an IR grid data file, and a calibration data file. Both the visible and infrared data cover from pole to pole, from 65 deg W. to 155 deg E. The resolutions are 0.9 km and 8 km, respectively. The ADIPS format is described in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)"* by P.L. McKowan, TRF B29538.

***** HCMH *****

HCMH, BARNES
HEAT CAPACITY MAPPING RADIOMETER

Data set name - RADIOMETER DATA ON FILM

NSSDC ID 78-041A-01A, RADIOMETER DATA ON FILM

Time period covered - 06/06/78 TO 09/07/80

Quantity of data - 41,200 B/W NEGATIVE FRAMES

These radiometer image data, provided by the experimenter, are on 241-mm rolls. They contain, in addition to the actual imagery, annotation information, a gray scale, frame identification (ID), resolution targets, registration marks, and tick marks. The annotation information contains contrast range and radiance histogram information for the scene. The gray scale consists of 16 density steps, which are generated by dividing the input digital range into 16 equal steps. The frame ID is a three-digit number corresponding to the location of the numbered frame relative to the other frames within a given roll. The resolution targets are bar patterns in both the horizontal and vertical directions. For each direction there are four spatial frequencies. There are four registration marks on the outside of the image corners (each registration mark is a cross). Tick marks, giving hotline oblique Mercator coordinates, are located around the four sides of the image. There is one tick mark printed for each coordinate. The scale of imagery is numerically 1:4,000,000, and these images are contrast enhanced. The spatial resolution is approximately 600 m at nadir for the IR channel (10.5 - 12.5 micrometers) and 500 m for the visible channel (0.5 - 1.1 micrometers). Areas covered include parts of the United States, western Canada, western Europe, northern Africa, and eastern Australia.

Data set name - IMAGE DATA ON MAGNETIC TAPE

NSSDC ID 78-041A-01B, IMAGE DATA ON MAG TAPE

Time period covered - 05/11/78 TO 12/06/79

Quantity of data - 304 REELS OF TAPE

This set of image data is on 9-track, 1600-bpi, binary magnetic tapes in band sequential (BSQ) format. The image data section contains introductory data as well as the actual sensor data. Each record contains sensor data representing one scan line, the support data associated with that scan line (if any are present), and fill data. The header specifies the characteristics of the image data. The scale of imagery is numerically 1:4,000,000, and these images are contrast enhanced. The spatial resolution is approximately 600 m at nadir for the IR channel (10.5 - 12.5 micrometers) and 500 m for the visible channel (0.5 - 1.1 micrometers). Areas covered include parts of the United States, western Canada, western Europe, northern Africa, and eastern Australia.

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Data set name - DAY/NIGHT REGISTERED IMAGERY
NSSDC ID 78-041A-01C, DAY/NIGHT REGISTERED DATA ON FILM
Time period covered - 07/11/78 TO 09/16/79
Quantity of data - 7800 FEET OF B/W NEGATIVES

These day/night registered data consist of the following images: day visible, day thermal infrared, night thermal infrared, temperature difference (produced by differencing the radiometric temperatures observed during the night and day passes), and apparent thermal inertia. Each image is processed in an elongated format to provide maximum day/night overlap and may depict a scene as long as 3000 km. Each day/night pair is processed as a separate entity. (The quality of registration is scene dependent, being a function of the number and location of the features that can be identified and the residual distortion in the scene, caused by errors in estimation of the satellite attitude). Each frame contains a 16-step gray scale and annotation as to the date (day, month, year); latitude/longitude of the scene center; definition of the image type, i.e., day-vis, day-IR, etc.; sun angles (elevation and azimuth) where applicable; geometric correction applied to the data; type of ephemeris data used to compute the image center; agency and project names; and frame identification number. Data are available in black and white on 241-mm transparencies or prints.

Data set name - DAY/NIGHT REGISTERED DATA ON MAGNETIC TAPE

NSSDC ID 78-041A-01D, DAY/NIGHT REGISTERED DATA
Time period covered - 05/11/78 TO 06/17/79
Quantity of data - 310 REELS OF TAPE

These imagery data are on 9-track, 1600-bpi, band sequential, binary tapes and consist of the following images: day visible, day thermal infrared, night thermal infrared, temperature difference (produced by differencing the radiometric temperatures observed during the night and day passes), and apparent thermal inertia. Each image is processed in an elongated format to provide maximum day/night overlap and may depict a scene as long as 3000 km. Each day/night pair is processed as a separate entity. Each frame contains a 16-step gray scale and annotation as to the date; latitude/longitude of the scene center; definition of the image type, i.e., day-vis, day-IR, etc.; sun angles (elevation and azimuth) where applicable; geometric correction applied to the data; type of ephemeris data used to compute the image center; agency and project names; and frame identification number. There are a limited number of pairs.

***** LOGACS 1, AGENA *****

LOGACS 1, AGENA, BRUCE
LOGACS 1, ATMOSPHERIC DENSITY SYSTEM

Data set name - DENSITY PLOTS, 140-240KM, 23-26 MAY 1967
ON MICROFICHE

NSSDC ID 67-050B-01A, PLOTS, 140-240 KM, MAY 67, FICHE
Time period covered - 05/23/67 TO 05/26/67
Quantity of data - 9 CARDS OF B/W MICROFICHE

This data set consists of reduced density data in the form of density-altitude profiles on semilog plots. There are 98 plots with altitude ranging from 140-260 km. The plots are by orbit (orbits 5 through 66, with gaps in data coverage) and separated within orbit according to whether their motion was toward or away from perigee. These data are in vol 2, appendix B, of Pearson et al., "The Low-G Accelerometer Calibration System Orbital Accelerometer Experiment" (TRF B19604). Documentation for reduction of these data are in chapter 2, vol 1, of this reference.

Data set name - ACCELEROMETER PLOTS, 140-240 KM,
23-26 MAY 1967, ON MICROFICHE

NSSDC ID 67-050B-01B, ACCELEROMETER PLOTS, MAY 67, FICHE
Time period covered - 05/23/67 TO 05/26/67
Quantity of data - 9 CARDS OF B/W MICROFICHE

This data set consists of reduced data, in the form of linear graphs against time reference G (TRG) time in seconds, from the accelerometer experiment. One set of graphs is in counts (C), and the other set is in ft/sec sq. The "count"

graphs are in vol 1, appendix C, and the other graphs, converted to units of acceleration, are in vol 2, appendix A, of Pearson et al., "The Low-G Accelerometer Calibration System Orbital Accelerometer Experiment" (TRF B19604). Experiment corrections and calibration have been applied to these data. Documentation for reduction procedures used for these data are in chapter 2, vol 1 of this reference.

LOGACS 1, AGENA, CHIU
WIND COMPONENT NORMAL TO ORBIT PLANE
BELOW 200 KM

Data set name - WIND COMPONENTS PERPENDICULAR TO ORBIT
PLANE BELOW 200 KM, 25-27 MAY 1967, FICHE

NSSDC ID 67-050B-02A, WIND COMP BELOW 200 KM, MICROFICHE
Time period covered - 05/25/67 TO 05/27/67
Quantity of data - 9 CARDS OF B/W MICROFICHE

Wind velocity components perpendicular to the orbit plane (inclination 91.5 deg) were calculated using the satellite yaw angle of attack data. These are reduced data on polar plots prepared by the experimenter's office. On each of eight polar diagrams (N pole only), several orbits (near perigee) are traced with component wind vectors plotted at regularly spaced intervals. For an orbital trace covering 90 deg lat, about 12 component winds are calculated. Two of the polar diagrams are "double scale" and also constant height lines for the data. These data are on pages 7-31 through 7-38 of section 7, vol 2, of Pearson et al., "The Low-G Accelerometer Calibration System Orbital Accelerometer Experiment" (TRF B19604). Documentation for reduction of these data is also contained in this paper (section 7). Raw data samples are illustrated in the paper, and more complete raw data make up appendix C of vol 2.

***** NIMBUS 1 *****

NIMBUS 1, FOSHEE
HIGH-RESOLUTION INFRARED RADIOMETER
(HRIR)

Data set name - HRIR METEOROLOGICAL RADIATION DATA ON
TAPE

NSSDC ID 64-052A-03A, NIMBUS HRIR MET. RADIATION TAPES
Time period covered - 08/29/64 TO 09/22/64
Quantity of data - 238 REELS OF TAPE

This experimenter-supplied radiance data set consists of 7-track, 800-bpi, binary magnetic tapes that were generated on an IBM 7094 computer. It contains radiation values emitted within the 3.5- to 4.1-micrometer atmospheric window. The first record of each orbit contains information about the orbit. Subsequent records contain radiation values, location, and time of each observation. A detailed description of this data set is contained in 64-052A-03D.

Data set name - HRIR PHOTOFACSIMILE FILM STRIPS

NSSDC ID 64-052A-03B, HRIR PHOTOFACSIMILE FILM STRIPS
Time period covered - 08/28/64 TO 09/22/64
Quantity of data - 186 FEET OF B/W NEGATIVES

This set of 70-mm photofacsimile film strips contains orbital nighttime cloud cover or the earth's surface temperature from emission within the 3.5- to 4.1-micrometer atmospheric window. The film strips are available in the form of either positive or negative transparencies or as positive prints. Each picture is gridded with geographic coordinates. Data set 64-052A-03C contains contact prints of all available photofacsimile film strips and should be consulted before ordering specific data.

Data set name - HRIR DATA CATALOG, PHOTOFACSIMILE FILM
STRIPS ON MICROFICHE

NSSDC ID 64-052A-03C, HRIR FILM STRIP CAT ON MICROFICHE
Time period covered - 08/28/64 TO 09/22/64
Quantity of data - 4 CARDS OF B/W MICROFICHE

The catalog named "Photofacsimile Film Strips" is the first of two volumes of the "Nimbus 1 High Resolution Radiation

Data Catalog and Users' Manual." It contains a complete description of the experiment, detector calibration, performance, and data processing. It also contains a complete index, subpoint track summaries, and contact prints of the photofacsimile film strips.

Data set name - HRIR DATA CATALOG, RADIATION TAPES

NSSDC ID 64-052A-03D, HRIR RAD. TAPE CAT ON MICROFICHE

Time period covered - 08/28/64 TO 09/22/64

Quantity of data - 2 CARDS OF B/W MICROFICHE

The catalog named "Nimbus Meteorological Radiation Tapes" is the second of two volumes of the "Nimbus I High Resolution Radiation Data Catalog and Users' Manual." It contains a complete description of the experiment, performance, and data acquisition and processing. It also contains a complete index to the tapes and to their calibration, location, and formats.

***** NIMBUS 2 *****

Data set name - NIMBUS 2 DATA CATALOG

NSSDC ID 66-040A-000, DATA CATALOG OF EXPERIMENT OPERATIONS

Time period covered - 05/15/66 TO 07/28/66

Quantity of data - 29 CARDS OF B/W MICROFICHE

The "Nimbus II Data Catalog" was published to document meteorological data acquired by the Nimbus 2 meteorological satellite. The catalog presents geographic location and time coverage of tape and/or photographic forms of the data from the Advanced Vidicon Camera System (AVCS), the High-Resolution Infrared Radiometer (HRIR), and the Medium-Resolution Infrared Radiometer (MRIR). This catalog does not contain background information concerning the satellite nor is there a description of the experiments or data formats. Such information is contained in the "Nimbus II Users' Guide," which is a necessary adjunct to each catalog volume. The catalog consists of five volumes: vol 1, May 15 to June 30, 1966; vol 2, July 1966; vol 3, August 1966; vol 4, September 1966; and vol 5, October 1 to November 15, 1966.

NIMBUS 2, FOSHEE
HIGH-RESOLUTION INFRARED RADIOMETER
(HRIR)

Data set name - HRIR METEOROLOGICAL RADIATION DATA ON TAPE

NSSDC ID 66-040A-03A, NIMBUS HRIR MET. RADIATION TAPES

Time period covered - 05/15/66 TO 11/15/66

Quantity of data - 1760 REELS OF TAPE

This experimenter-supplied radiance data set consists of 7-track, 800-bpi, binary magnetic tapes that were generated on an IBM 7094 computer. It contains radiation values emitted within the 3.5- to 4.1-micrometer atmospheric window. The first record of each orbit contains information about the orbit. Subsequent records contain radiation values, location, and time of each observation. The format of the tapes is given in appendix A of the "Nimbus II Users' Guide."

Data set name - HRIR PHOTOFACSIMILE FILM STRIPS

NSSDC ID 66-040A-03B, HRIR PHOTOFACSIMILE FILM STRIPS

Time period covered - 05/15/66 TO 11/15/66

Quantity of data - 1977 FEET OF B/W NEGATIVES

This set of 70-mm photofacsimile film strips contains orbital nighttime cloud cover or the earth's surface temperature from emission within the 3.5- to 4.1-micrometer atmospheric window. The film strips are available in the form of either positive or negative transparencies or as positive prints. Each picture swath is gridded with geographic coordinates and covers a distance approximately from pole to pole. As a result of direct sunlight, the pictures are degraded considerably near the south polar regions. The processing techniques used to produce the data set and a full description of the data are contained in section 3.4.1 of the "Nimbus II Users' Guide." For an index of all available data see "The Nimbus II High Resolution Infrared Data World Montage

Catalog," 66-040A-03D.

Data set name - HRIR WORLD MONTAGE CATALOG ON MICROFICHE

NSSDC ID 66-040A-03D, HRIR WORLD MONTAGE CATALOG

Time period covered - 05/20/66 TO 11/15/66

Quantity of data - 4 CARDS OF B/W MICROFICHE

This data set contains "The Nimbus II High Resolution Infrared Data World Montage Catalog," which pictorially indexes and documents the radiometric data. The montages shown represent the nighttime data obtained during a 24-h period. This catalog is complementary to and may be used in conjunction with "The Nimbus II Data Catalog," vol 1 through 5, 66-040A-03C.

NIMBUS 2, MCCULLOCH
MEDIUM-RESOLUTION INFRARED RADIOMETER
(MRIR)

Data set name - MRIR METEOROLOGICAL RADIATION DATA ON TAPE

NSSDC ID 66-040A-04A, NIMBUS MRIR MET. RADIATION TAPES

Time period covered - 05/15/66 TO 07/28/66

Quantity of data - 98 REELS OF TAPE

The Medium-Resolution Infrared Radiometer (MRIR) data are on 7-track, 800-bpi, binary magnetic tapes called Nimbus Meteorological Radiation Tapes (NMRT-MRIR). They contain radiances measured at 6.4-6.9, 10-11, 14-16, 5-30, and 0.2-4.0 micrometers. The latitude, longitude, time, and other orbital and telemetry data are also included. The format of the tapes can be found in appendix B of the "Nimbus II Users' Guide."

Data set name - MRIR PHOTO DISPLAY

NSSDC ID 66-040A-04B, MRIR PHOTO DISPLAY

Time period covered - 05/15/66 TO 07/28/66

Quantity of data - 979 B/W NEGATIVE FRAMES

This Medium-Resolution Infrared Radiometer (MRIR) data set consists of 4- by 5-in. photographic film sheets. Each film sheet contains an entire orbit (daylight portion) of data measured at 6.4-6.9, 10-11, 14-16, 5-30, and 0.2-4.0 micrometers. There are also associated latitude grids, time, and gray scales representing different temperatures. The processing techniques used to produce the data set and a full description of the data set are contained in section 4.3.4 of the "Nimbus II Users' Guide."

Data set name - MRIR PICTORIAL DATA CATALOG ON MICROFICHE

NSSDC ID 66-040A-04D, MRIR PICTORIAL DATA CATALOG

Time period covered - 05/15/66 TO 07/28/66

Quantity of data - 10 CARDS OF B/W MICROFICHE

This data set contains "The Nimbus II Medium Resolution Infrared Pictorial Data Catalog," which documents pictorially the data from the Medium-Resolution Infrared Radiometer (MRIR) experiment. The photographs shown in the catalog represent the 4- by 5-in. film sheets (data set 66-040A-04B) that are available from the MRIR experiment. This catalog is complementary to and may be used in conjunction with "The Nimbus 2 Data Catalog," vol 1 and 2 (see data set 66-040A-04C).

NIMBUS 2, SCHULMAN
ADVANCED VIDICON CAMERA SYSTEM (AVCS)

Data set name - AVCS WORLD MONTAGE CATALOG ON MICROFICHE

NSSDC ID 66-040A-01B, WORLD MONTAGE CAT, ON MICROFICHE

Time period covered - 05/15/66 TO 08/31/66

Quantity of data - 4 CARDS OF B/W MICROFICHE

The "Nimbus 2 Advanced Vidicon Camera System Data World Montage Catalog" contains black and white pictorial montages

that are miniature reproductions of the daytime television pictures taken each day from successive orbits. The satellite orbit number is printed below each swath. Transparent grid overlays (one for the Eastern Hemisphere and one for the Western Hemisphere) provide geographic references. These montages are useful for browse purposes and may be directly useful for some research. The catalog does not contain background information on the spacecraft or experiment, nor is there a description of the techniques used in processing the data. Such information is contained in the "Nimbus II Users' Guide," which should be used in conjunction with this catalog.

***** NIMBUS 3 *****

Data set name - NIMBUS 3 DATA CATALOGS ON MICROFICHE

NSSDC ID 69-037A-00G, DATA CAT EXPERMNT OPERATNS, FICHE

Time period covered - 04/14/69 TO 05/31/70

Quantity of data - 55 CARDS OF B/W MICROFICHE

This data set consists of "The Nimbus III Data Catalog," documenting data acquired by the Nimbus 3 meteorological satellite. Brief summaries of the data are given in section 1 of each volume, and a listing of experiment-on-times is presented in section 2. The catalog covers the following periods: vol 1, April 14 to May 31, 1969; vol 2, June 1969, vol 3, July 1969; vol 4, August 1969; vol 5, September 1 to December 31, 1969; and vol 6, January 1 to May 31, 1970.

NIMBUS 3, BRANCHFLOWER
IMAGE DISSECTOR CAMERA SYSTEM (IDCS)

Data set name - NIMBUS 3 DATA CATALOGS ON MICROFICHE

NSSDC ID 69-037A-06A, IDCS WORLD MONTAGE CAT, MICROFICHE

Time period covered - 04/14/69 TO 05/31/70

Quantity of data - 51 CARDS OF B/W MICROFICHE

This catalog contains black and white pictorial montages from the Nimbus 3 Image Dissector Camera System (IDCS). These montages consist of miniature reproductions of daily, daytime pictures and are made up of adjacent swaths of data from successive orbits. The satellite orbit number is printed below each swath. A transparent grid overlay provides geographic reference. The catalog consists of six volumes: vol 1, April 14 to May 31, 1969; vol 2, June 1969; vol 3, July 1969; vol 4, August 1969; vol 5, September 1 to December 31, 1969; and vol 6, January 1 to May 31, 1970. However, IDCS montages are only contained in the first five volumes. This catalog does not contain background information on the spacecraft or experiment, nor is there a description of the techniques used in processing the data. Such information is contained in "The Nimbus III User's Guide," which should be used with this catalog when ordering data.

NIMBUS 3, CHERRIX
HIGH-RESOLUTION INFRARED RADIOMETER
(HRIR)

Data set name - HRIR NIGHTTIME (3.4 TO 4.2 MICRON)
PHOTOFACSIMILE FILM STRIPS

NSSDC ID 69-037A-02A, NIGHTTIME PHOTOFACSIMILE FILMS

Time period covered - 04/22/69 TO 01/31/70

Quantity of data - 3235 FEET OF B/W NEGATIVES

This data set consists of nighttime High Resolution Infrared Radiometer (HRIR) data on 70-mm photofacsimile film strips. The data were measured at 3.4 to 4.2 micrometers. The film strips are uniform or variable density exposure, positive or negative copies, in either a transparency or paper print. The variable density exposure film strips were produced with enhanced contrast, while the uniform density exposure film strips are true copies of the archived HRIR film strips. Each film strip is gridded with geographic coordinates and is identified by orbit number and time. For a complete description of the photofacsimile film strips, see section 3.4.1 in "The Nimbus III User's Guide," available from NSSDC.

Data set name - HRIR DAYTIME (0.7 TO 1.3 MICRON)
PHOTOFACSIMILE FILM STRIPS

NSSDC ID 69-037A-02B, DAYTIME PHOTOFACSIMILE FILM

Time period covered - 04/22/69 TO 01/31/70

Quantity of data - 2983 FEET OF B/W NEGATIVES

This data set consists of daytime High Resolution Infrared Radiometer (HRIR) data on 70-mm photofacsimile film strips. The data were measured at 0.7 to 1.3 micrometers. The film strips are uniform or variable density exposure, positive or negative copies, in either a transparency or paper print. The variable density exposure film strips were produced with enhanced contrast, while the uniform density exposure film strips are true copies of the archived HRIR film strips. Each film strip is gridded with geographic coordinates and is identified by orbit number and time. For a complete description of the photofacsimile film strips, see section 3.4.1 in "The Nimbus III User's Guide," available from NSSDC.

Data set name - HRIR METEOROLOGICAL RADIATION TAPES

NSSDC ID 69-037A-02C, HRIR METEOR. RADIATION TAPES

Time period covered - 04/17/69 TO 03/21/70

Quantity of data - 1015 REELS OF TAPE

This radiance data set consists of 7-track, 800-bpi, binary magnetic tapes that were generated on an IBM 360 computer. It contains daytime radiation values measured at 0.7 to 1.3 micrometers and nighttime values at 3.4 to 4.2 micrometers. The first record of each orbit contains information about the orbit. Subsequent records contain radiation values, location, and time of each observation. The format of this data set is given in section 3.5 of "The Nimbus III User's Guide."

Data set name - NIMBUS 3 DATA CATALOGS ON MICROFICHE

NSSDC ID 69-037A-02D, HIGH RES IR DATA CAT, MICROFICHE

Time period covered - 04/14/69 TO 05/31/70

Quantity of data - 55 CARDS OF B/W MICROFICHE

This data set consists of a series of catalogs that pictorially describe and index the data from the Nimbus 3 High-Resolution Infrared Radiometer (HRIR) experiment. These volumes, which compose "The Nimbus III Data Catalog," cover the following periods: vol 1, April 14 to May 31, 1969; vol 2, June 1969; vol 3, July 1969; vol 4, August 1969; vol 5, September 1 to December 31, 1969; and vol 6 (final), January 1 to May 31, 1970. HRIR montages, which are presented in section 4 of the first five volumes (section 5 in vol 1), include both daytime (0.7 to 1.3 micrometer) and nighttime (3.4 to 4.2 micrometer) coverage. These photographs are arranged in chronological order in a world montage format. Key latitudes can be read by using a superimposed grid contained in each volume. Complete descriptions of the HRIR experiment and of available data are contained in section 3 of "The Nimbus III User's Guide," which should be used in conjunction with the data catalog.

NIMBUS 3, HANEL
INFRARED INTERFEROMETER SPECTROMETER
(IRIS)

Data set name - INFRARED INTERFEROMETER SPECTROMETER
(IRIS) ARCHIVAL TAPES

NSSDC ID 69-037A-03A, NIMBUS IRIS ARCHIVAL TAPES

Time period covered - 04/15/69 TO 07/01/69

Quantity of data - 102 REELS OF TAPE

This set of radiation data was originally generated on an IBM 360 computer onto 9-track, 1600-bpi, binary tapes. The tapes contain thermal emission spectra of the earth's atmosphere system. The spectra were obtained from Fourier transformed interferograms with wave numbers between 400 and 2000 reciprocal cm and have a nominal spectral resolution of 5 reciprocal cm. The tapes also contain documentation information, reference calibration, average instrument temperature, calibrated atmospheric spectrum, and a summary for each orbital pass. Ninety degrees have been added to all latitude values to eliminate negative signs. A more complete description of the IRIS archival tapes appears in section 5 of "The Nimbus III User's Guide," available from NSSDC.

NIMBUS 3, MCCULLOCH
MEDIUM-RESOLUTION INFRARED RADIOMETER
(MRIR)

Data set name - MRIR PHOTOFACSIMILE FILMS

NSSDC ID 69-037A-05A, MRIR PHOTOFACSIMILE FILMS

Time period covered - 04/14/69 TO 02/05/70

This set of photofacsimile film strips is available as 4- by 5-in. positive or negative film transparencies or positive paper prints. Data measured by five channels (6.5-7.0, 10-11, 14.5-15.5, 20-23, and 0.2-4.0 micrometers) are displayed along with gridding, time, and a calibration gray-scale strip. Prints of these photofacsimile data are contained in data set 69-037A-05C.

Data set name - MRIR METEOROLOGICAL RADIATION TAPES

NSSDC ID 69-037A-05B, MRIR METEOR. RADIATION TAPES

Time period covered - 04/15/69 TO 02/04/70

Quantity of data - 368 REELS OF TAPE

The Medium-Resolution Infrared Radiometer (MRIR) data are on 7-track, 800-bpi, binary magnetic tapes called Nimbus Meteorological Radiation Tapes (NMRT-MRIR). They contain radiances measured at 6.4-6.9, 10-11, 14-16, 5-30, and 0.2-4.0 micrometers. The latitude, longitude, time, and other orbital and telemetry data are also included. There is one file for each orbit of data. The first record in each file contains the documentation for the succeeding data records. The format of the tapes can be found in section 4 of "The Nimbus III User's Guide."

Data set name - NIMBUS 3 DATA CATALOGS ON MICROFICHE

NSSDC ID 69-037A-05C, MED RES IR DATA CATALOGS, FICHE

Time period covered - 04/14/69 TO 05/31/70

Quantity of data - 62 CARDS OF B/W MICROFICHE

This data set consists of a six-volume catalog called "The Nimbus III Data Catalog." It pictorially describes and indexes the data from the Nimbus 3 Medium-Resolution Infrared Radiometer (MRIR) experiment. The data catalog covers the following periods: vol 1, April 14 to May 31, 1969; vol 2, June 1969; vol 3, July 1969; vol 4, August 1, 1969; vol 5, September 1 to December 31, 1969; and vol 6, January 1 to May 31, 1970. The MRIR pictorial data are presented in section 5 of each volume. These photographs are available from NSSDC as 4- by 5-in. negatives (see data set 69-037A-05A.) Complete descriptions of the MRIR experiment and of available data are contained in section 4 of "The Nimbus III User's Guide," which should be used in conjunction with the data catalog.

NIMBUS 3, WARK
SATELLITE INFRARED SPECTROMETER (SIRS)

Data set name - SIRS RADIANCE VALUES ON TAPE

NSSDC ID 69-037A-04A, SIRS RADIANCE TAPES

Time period covered - 04/14/69 TO 06/19/70

Quantity of data - 60 REELS OF TAPE

This data set contains radiance values that were generated on a CDC 6600 computer onto 7-track, 556-bpi, binary magnetic tapes. The first record of each orbit contains information identifying the orbit and a summary of the instrument status throughout the orbit. The following records contain the radiance values along with calibration data, latitude, longitude, and time of each observation. For a more complete description of the tape format and a discussion of the data quality, see vol 1 of both "The Nimbus III User's Guide" and "The Nimbus III Data Catalog." A set of derived temperature profiles is available from the National Climatic Data Center, Asheville, North Carolina.

***** NIMBUS 4 *****

Data set name - NIMBUS 4 DATA CATALOG

NSSDC ID 70-025A-000, DATA CATALOG OF EXPERIMENT OPERATIONS

Time period covered - 04/18/70 TO 04/30/72

Quantity of data - 48 CARDS OF B/W MICROFICHE

This data set consists of a series of volumes in the "Nimbus 4 Data Catalog," published by GSFC, which documents data acquired by the Nimbus 4 meteorological satellite. Brief summaries of experiment operations are presented in section 1 of each volume. Section 2 of each volume contains a listing of satellite equatorial crossing times and on-off times for the various experiments. Vol 1 covers the time period April 18 to May 22, 1970; vol 2, May 23 to June 30, 1970; vol 3, July 1 to August 31, 1970; vol 4, September 1 to October 31, 1970; vol 5, November 1 to December 31, 1970; vol 6, January 1 to February 28, 1971; vol 7, March 1 to April 30, 1971; and vol 8, May 1, 1971, to April 30, 1972.

NIMBUS 4, BRANCHFLOWER
IMAGE DISSECTOR CAMERA SYSTEM (IDCS)

Data set name - NIMBUS 4 DATA CATALOGS, ON MICROFICHE

NSSDC ID 70-025A-06A, IDCS WORLD MONTAGE CAT, MICROFICHE

Time period covered - 04/18/70 TO 04/08/71

Quantity of data - 48 CARDS OF B/W MICROFICHE

This catalog contains daily black and white pictorial montages that are made up of adjacent swaths of data from successive orbits. The satellite orbit number is printed below each swath. A transparent grid overlay provides geographic reference. These montages may assist a user in identifying specific data and may be directly useful for some research. The catalog consists of eight volumes, seven of which contain montages. It does not, however, contain background information on the spacecraft or experiment, nor is there a description of the techniques used in processing the data. The "Nimbus IV User's Guide" should be used with this catalog when ordering data.

NIMBUS 4, HANEL
INFRARED INTERFEROMETER SPECTROMETER
(IRIS)

Data set name - INFRARED INTERFEROMETER SPECTROMETER
(IRIS) RADIANCE TAPES

NSSDC ID 70-025A-03A, IRIS RADIANCE TAPES

Time period covered - 04/09/70 TO 01/30/71

Quantity of data - 466 REELS OF TAPE

This set of calibrated radiance data consists of 9-track, 1600-bpi magnetic tapes that were processed on an IBM 360 computer. The tapes contain thermal emission of the earth-atmosphere system for wave numbers between 400 and 1600 cmee-1, with a nominal resolution of 2.8 cmee-1. The tapes also contain documentation information, reference calibration, average instrument temperatures, and a summary for each orbital pass. Additional description of the data can be found in section 4 of "The Nimbus IV User's Guide," TRF B06861.

NIMBUS 4, HEATH
BACKSCATTER ULTRAVIOLET (BUV)
SPECTROMETER

Data set name - BUV RADIANCE VALUES (AT 6 DISCRETE
WAVELENGTHS) VS EARTH LOCATIONS

NSSDC ID 70-025A-05B, BUV RADIANCE VALUES (U-TAPE)

Time period covered - 04/10/70 TO 05/06/77

Quantity of data - 43 REELS OF TAPE

This set of radiance data is contained on 9-track, 1600-bpi, EBCDIC magnetic tapes that were created on an IBM 360 computer. Derived from the Primary Data Base (PDB) tapes (70-025A-05E), the data are calibrated and located backscattered ultraviolet radiances measured at 12 wavelengths between 0.25 and 0.34 micrometer in 32-s scans. The data set also contains quality flags, dark current analyses of the data,

orbital information, and housekeeping data.

Data set name - HOUSEKEEPING AND RADIANCE DATA REDUCED
BUT STILL IN TELEMETRY UNITS

NSSDC ID 70-025A-05E, PRIMARY DATA BASE TAPES (PDB)

Time period covered - 04/09/70 TO 05/06/77

Quantity of data - 188 REELS OF TAPE

This set of raw data is contained on 9-track, 1600-bpi, EBCDIC magnetic tapes that were created on an IBM 360 computer. It contains raw counts measured at 12 wavelengths between 0.25 and 0.34 micrometer in 32-s scans. It also contains ephemeris data, experiment subsystem status information, and spacecraft housekeeping and orbit data.

Data set name - BUY DARK CURRENT STUDY MASTER DATA ON
TAPE

NSSDC ID 70-025A-05H, BUY DARK CURRENT STUDY MSTR DATA

Time period covered - 04/10/70 TO 12/16/71

Quantity of data - 3 REELS OF TAPE

These dark current data are on 9-track, 6250-bpi, binary magnetic tapes that were created on an IBM 360/91 computer. Generated from the U-tapes (radiance data set, NSSDC ID 70-025A-05B), they contain geophysical indices and classification; geographic and geomagnetic coordinates; solar magnetic parameters and angles; monochromator and photometer pulse count and analog data; and energetic trapped particles. There is a one-to-one correspondence between the files on this master data set and the ones on the working tapes (70-025A-05I). The only difference between the two types is that the working tapes contain data from the master tapes that have been subjected to filtering. For further information, see "Data Filtering," NASA X-601-78-21.

Data set name - BUY DARK CURRENT STUDY WORKING DATA ON
TAPE

NSSDC ID 70-025A-05I, BUY DARK CURRENT STUDY WORK DATA

Time period covered - 04/10/70 TO 12/16/71

Quantity of data - 3 REELS OF TAPE

These dark current data are on 9-track, 6250-bpi, binary magnetic tapes that were created on an IBM 360/91 computer. Generated from the U-tapes (radiance data set, NSSDC ID 70-025A-05B), they contain geophysical indices and classification; geographic and geomagnetic coordinates; solar magnetic parameters and angles; monochromator and photometer pulse count and analog data; and energetic trapped particles. There is a one-to-one correspondence between the files on this working data set and the ones on the master tapes (70-025A-05H). The only difference between the two types is that the working tapes contain data from the master tapes that have been subjected to filtering. For further information, see "Data Filtering," NASA X-601-78-21.

Data set name - ZONAL MEANS TAPE (ZMT)

NSSDC ID 70-025A-050, ZONAL MEANS TAPE (ZMT)

Time period covered - 04/10/70 TO 05/02/77

Quantity of data - 1 REEL OF TAPE

This set of averaged ozone data was supplied by the NASA Ozone Processing Team on one 9-track, 1600-bpi tape, in IBM 3081 binary format. It contains daily, weekly, monthly, and seasonal averages of total ozone, mixing ratios, and reflectivities in geodetic coordinates. The input data source is the High Density BUY Ozone (HDBUY; NSSDC ID 70-025A-05Q). Data values are given for each of the same 19 pressure levels (0.3, 0.4, 0.5, 0.7, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.0, 10, 15, 20, 30, 40, 50, 70, and 100 mbar) for 10-deg latitudinal zones from 80 deg S. to 80 deg N. There are also standard deviations, maximum and minimum values, and sample size. This data set was reprocessed using the same algorithm as that used to process the Nimbus 7 Solar Backscatter Ultraviolet (SBUV) data set (78-098A-09K). Their formats are identical, but users should note that ground truth data had been used in adjusting the BUY albedos for changes in instrument sensitivity, thus rendering uncertainty in the derived ozone values for long-term trend study. Also, dark current counts that are zenith angle dependent and that affect the derivation of ozone profiles, especially at high altitudes, are flagged. For further information, refer to the "Note to Users of BUY Tapes," issued in 1987.

Data set name - COMPRESSED OZONE PROFILE (CPOZ) DATA ON
MAGNETIC TAPE

NSSDC ID 70-025A-05P, COMPRESSED OZONE PROFILE TP(CPOZ)

Time period covered - 04/10/70 TO 05/06/77

Quantity of data - 4 REELS OF TAPE

This set of ozone data was supplied by the NASA Ozone Processing Team on 9-track, 1600-bpi tapes, in IBM binary format. The data set is a condensed version of the HDBUY (NSSDC ID 70-025A-05Q). Measured radiances, absorption coefficients, and instrument calibration for 13 wavelengths (0.25 to 0.34 micrometer) are contained in the header record. Data records contain earth-located total ozone (with and without IR cloud height information), reflectivity, ozone mixing ratios, and layer ozone amounts. The mixing ratios are given at 19 pressure levels (0.3, 0.4, 0.5, 0.7, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.0, 10, 15, 20, 30, 40, 50, 70, and 100 mbar). The layer ozone amounts are given for 12 layers: 0-0.24, 0.24-0.49, 0.49-0.99, 0.99-1.98, 1.98-3.96, 3.96-7.92, 7.92-15.8, 15.8-31.7, 31.7-63.3, 63.3-127, 127-253, and 253-1013 mbar. This data set was reprocessed using the same algorithm as that used to process the Nimbus 7 Solar Backscatter Ultraviolet (SBUV) data set (78-098A-09Q). Their formats are identical, but users should note that ground truth data had been used in adjusting the BUY albedos for changes in instrument sensitivity, thus rendering uncertainty in the derived ozone values for long-term trend study. Also, dark current counts that are zenith angle dependent and that affect the derivation of ozone profiles, especially at high altitudes, are flagged. For further information, refer to the "Note to Users of BUY Tapes," issued in 1987.

Data set name - TOTAL AND PROFILE OZONE DATA (HDBUY) ON
MAGNETIC TAPE

NSSDC ID 70-025A-05Q, TOTAL + PROFILE O3 TP (HDBUY)

Time period covered - 04/10/70 TO 05/06/77

Quantity of data - 15 REELS OF TAPE

This ozone data set was supplied by the NASA Ozone Processing Team on 9-track, 1600-bpi tapes, in IBM binary format. It contains, scan by scan and orbit by orbit, total ozone, reflectivities, ozone mixing ratios, and layer ozone amounts. The mixing ratios are given at 19 pressure levels: 0.3, 0.4, 0.5, 0.7, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.0, 10, 15, 20, 30, 40, 50, 70, and 100 mbar. The layer ozone amounts are given for 12 layers: 0-0.24, 0.24-0.49, 0.49-0.99, 0.99-1.98, 1.98-3.96, 3.96-7.92, 7.92-15.8, 15.8-31.7, 31.7-63.3, 63.3-127, 127-253, and 253-1013 mbar. This data set was reprocessed using the same algorithm as that used to process the Nimbus 7 Solar Backscatter Ultraviolet (SBUV) data set (78-098A-09D). Their formats are identical, but users should note that ground truth data had been used in adjusting the BUY albedos for changes in instrument sensitivity, thus rendering uncertainty in the derived ozone values for long-term trend study. Also, dark current counts that are zenith angle dependent and that affect the derivation of ozone profiles, especially at high altitudes, are flagged. For further information, refer to the "Note to Users of BUY Tapes," issued in 1987.

NIMBUS 4, HOUGHTON
SELECTIVE CHOPPER RADIOMETER (SCR)

Data set name - SELECTIVE CHOPPER RADIOMETER RADIANCE
TAPES

NSSDC ID 70-025A-10A, SCR RADIANCE TAPES

Time period covered - 07/27/70 TO 01/30/73

Quantity of data - 51 REELS OF TAPE

This data set contains calibrated, earth-located radiances that were prepared by the experimenter's office on 7-track, 800-bpi, binary magnetic tapes. The radiances, measured by 16 channels at 2.3-15 micrometers with a ground resolution of 25 km, are "declouded" (interpolated and smoothed across regions of cloud). They are grouped into major frames along with orbit, altitude, latitude, longitude, and some ancillary data. Each tape contains approximately 10 days of data.

NIMBUS 4, MCCULLOCH
TEMPERATURE-HUMIDITY INFRARED RADIOMETER
(THIR)

Data set name - THIR 11.5-MICRON PHOTOFACSIMILE FILM STRIPS

NSSDC ID 70-025A-02A, 11.5-MICRON CLOUD MONTAGE, FILM

Time period covered - 04/18/70 TO 04/08/71

Quantity of data - 8049 FEET OF B/W NEGATIVES

These montages of brightness temperatures, measured at 11.5 micrometers, are available on 70-mm photofacsimile film strips. Positive or negative copies of the film strips are available in uniform density exposure in either transparencies or paper prints. Daytime and nighttime orbital swaths are displayed in strips, each corresponding to a distance approximately from pole to pole and a width from horizon to horizon. The ground resolution of 7.7 km at nadir decreases as the horizontal distance from the subsatellite track increases. Each film strip is gridded with geographic coordinates and is identified by orbit number, time, and an indication of whether it is daytime (D) or nighttime (N). The strips are arranged chronologically on 100- to 500-ft rolls of film. Additional descriptions of the data can be found in section 3.4.1 of "The Nimbus IV User's Guide" (TRF B06861) and in "The Nimbus 4 Data Catalog," NSSDC ID 70-025A-02C (TRF B06582.)

Data set name - THIR 6.7-MICRON PHOTOFACSIMILE FILM STRIPS

NSSDC ID 70-025A-02B, 6.7-MICRON CLOUD MONTAGE, FILM

Time period covered - 04/18/70 TO 04/08/71

Quantity of data - 4419 FEET OF B/W NEGATIVES

These montages of brightness temperatures, measured at 6.7 micrometers, are available on 70-mm photofacsimile film strips. Positive or negative copies of the film strips are available in uniform density exposure in either transparencies or paper prints. Daytime and nighttime orbital swaths are displayed in strips, each corresponding to a distance approximately from pole to pole and a width from horizon to horizon. The ground resolution of 22.6 km at nadir decreases as the horizontal distance from the subsatellite track increases. Each film strip is gridded with geographic coordinates and is identified by orbit number, time, and an indication of whether it is daytime (D) or nighttime (N). The strips are arranged chronologically on 100- to 500-ft rolls of film. Additional descriptions can be found in section 3.4.1 of "The Nimbus IV User's Guide" (TRF B06861) and in "The Nimbus 4 Data Catalog," NSSDC ID 70-025A-02C (TRF B06582.)

Data set name - THIR DATA CATALOGS ON MICROFICHE

NSSDC ID 70-025A-02C, NIMBUS 4 THIR DATA CATALOGS, FICHE

Time period covered - 04/18/70 TO 04/08/71

Quantity of data - 48 CARDS OF B/W MICROFICHE

This data set consists of a series of volumes called "The Nimbus 4 Data Catalog." It pictorially describes data that are acquired by the Image Dissector Camera System (IDCS) and the Temperature-Humidity Infrared Radiometer (THIR) experiments. World montages are arranged in chronological order in each volume, which also includes superimposed grids for reading key latitudes. The eight-volume catalog covers the period April 1970 to April 1972. This data set should be used in conjunction with "The Nimbus IV User's Guide," TRF B06861.

Data set name - 11.5-MICRON THIR RADIATION TAPES

NSSDC ID 70-025A-02D, 11.5-MICRON CLOUD RADIANCE TAPE

Time period covered - 04/10/70 TO 02/13/71

Quantity of data - 1293 REELS OF TAPE

This set of brightness temperatures is available on 7-track, 800-bpi, binary magnetic tapes. These tapes, also referred to as Nimbus Meteorological Radiation Tapes (NMRT-THIR), are produced on an IBM 360 computer and contain one orbit of data per file. The first record of each file contains documentation and information describing the orbit. Subsequent records contain brightness temperatures that are measured at 11.5 micrometers with a ground resolution of 7.7 km. There are also locations and time of each observation.

Data set name - 6.7-MICRON THIR RADIATION TAPES

NSSDC ID 70-025A-02E, 6.7-MICRON CLOUD RADIANCE TAPE

Time period covered - 04/14/70 TO 03/25/71

Quantity of data - 1032 REELS OF TAPE

This set of brightness temperatures is available on 7-track, 800-bpi, binary magnetic tapes. These tapes, also referred to as Nimbus Meteorological Radiation Tapes (NMRT-THIR), are produced on an IBM 360 computer and contain one orbit of data per file. The first record of each file contains documentation and information describing the orbit. Subsequent records contain brightness temperatures that are measured at 6.7 micrometers with a ground resolution of 22.6 km. There are also locations and time of each observation.

NIMBUS 4, WARK
SATELLITE INFRARED SPECTROMETER (SIRS)

Data set name - SATELLITE INFRARED SPECTROMETER RADIANCE TAPES

NSSDC ID 70-025A-04A, SIRS RADIANCE TAPES

Time period covered - 04/08/70 TO 04/08/71

Quantity of data - 20 REELS OF TAPE

This set of radiance data is contained on 7-track, 556-bpi, binary magnetic tapes that were created on a CDC 6600 computer. An identical set of 556-bpi tapes generated on an IBM 7094 is also available. The data set contains radiances that were measured at 11-36 micrometer wavelengths. Unusable, erroneous, and improperly sequenced values are not included. It also does not contain the derived temperature profiles, which are available from the National Climatic Data Center, Asheville, North Carolina. For further description of the tape format, see section 1.5.3, vol 1, "The Nimbus 4 Data Catalog," TRF B06582.

***** NIMBUS 5 *****

Data set name - DATA CATALOGS OF EXPERIMENT OPERATIONS

NSSDC ID 72-097A-00D, DATA CATALOG OF EXPERIMENT OPERATIONS

Time period covered - 12/19/72 TO 07/31/74

Quantity of data - 78 CARDS OF B/W MICROFICHE

This GSFC "Nimbus 5 Data Catalog" documents data from the Nimbus 5 meteorological satellite. Experiment operation summaries are presented in section 1 of each volume, which contains a listing of satellite equatorial crossing times and on-off times for the various experiments. Vol 1 covers December 19, 1972, to January 31, 1973; vol 2, February 1, 1973, to March 31, 1973; vol 3, April 1, 1973, to May 31, 1973; vol 4, June 1, 1973, to July 31, 1973; vol 5, August 1, 1973, to September 30, 1973; vol 6, October 1, 1973, to November 30, 1973; vol 7, December 1, 1973, to January 31, 1974; vol 8, February 1, 1974, to March 31, 1974; vol 9, April 1, 1974, to May 31, 1974; and vol 10, June 1, 1974, to July 31, 1974.

NIMBUS 5, HOUGHTON
SELECTIVE CHOPPER RADIOMETER (SCR)

Data set name - SELECTIVE CHOPPER RADIOMETER RADIANCE DATA ON MAGNETIC TAPE

NSSDC ID 72-097A-02A, SCR RADIANCE TAPES

Time period covered - 12/13/72 TO 12/26/74

Quantity of data - 70 REELS OF TAPE

This data set contains calibrated, earth-located radiances that were prepared by the experimenter's office on 7-track, 800-bpi, binary magnetic tapes. The radiances, measured by 16 channels at 2.3-15 micrometers with a ground resolution of 25 km, are "declouded" (interpolated and smoothed across regions of cloud). They are grouped into major frames along with orbit, altitude, latitude, longitude, and some ancillary data. Each tape contains approximately 10 days of data.

NIMBUS 5, HOVIS
SURFACE COMPOSITION MAPPING RADIOMETER (SCMR)

ORIGINAL PAGE IS
OF POOR QUALITY

Data set name - SURFACE COMPOSITE MAPPING RADIMETER
(SCMR) DATA ON MAGNETIC TAPE

NSSDC ID 72-097A-05A, SFC COMPOSITION MAPPING RAD TAPES

Time period covered - 12/11/72 TO 12/30/72

Quantity of data - 45 REELS OF TAPE

This data set of earth surface radiances was generated on an IBM 360 computer and put on 9-track, 1600-bpi, EBCDIC magnetic tapes. It contains calibrated and located IR radiances and brightness temperatures at 660 x 660 m ground resolution. Data are grouped in 7-min observations in the Mercator projection, covering globally from 80 deg S. to 80 deg N. For each day of observation, there is a varying number of archival magnetic tapes.

NIMBUS 5, MCCULLOCH
TEMPERATURE/HUMIDITY INFRARED RADIMETER
(THIR)

Data set name - 11.5-MICRON THIR PHOTOFACSIMILE FILM

NSSDC ID 72-097A-08A, 11.5-MICRON CLOUD MONTAGE, FILM

Time period covered - 12/19/72 TO 03/12/75

Quantity of data - 18554 FEET OF B/W NEGATIVES

These montages of brightness temperatures, measured at 11.5 micrometers, are available on 70-mm photofacsimile film strips. Positive or negative copies of the film strips are available in uniform density exposure in either transparencies or paper prints. Daytime and nighttime orbital swaths are displayed in strips, each corresponding to a distance approximately from pole to pole and a width from horizon to horizon. The ground resolution of 8.2 km at nadir decreases as the horizontal distance from the subsatellite track increases. Each film strip is gridded with geographic coordinates and is identified by orbit number, time, and an indication of whether it is daytime (D) or nighttime (N). The strips are arranged chronologically on 100- to 500-ft rolls of film.

Data set name - 6.7-MICRON THIR PHOTOFACSIMILE FILM

NSSDC ID 72-097A-08B, 6.7-MICRON CLOUD MONTAGES, FILM

Time period covered - 12/19/72 TO 03/12/75

Quantity of data - 19213 FEET OF B/W NEGATIVES

These montages of brightness temperatures, measured at 6.7 micrometers, are available on 70-mm photofacsimile film strips. Positive or negative copies of the film strips are available in uniform density exposure in either transparencies or paper prints. Daytime and nighttime orbital swaths are displayed in strips, each corresponding to a distance approximately from pole to pole and a width from horizon to horizon. The ground resolution of 22.5 km at nadir decreases as the horizontal distance from the subsatellite track increases. Each film strip is gridded with geographic coordinates and is identified by orbit number, time, and an indication of whether it is daytime (D) or nighttime (N). The strips are arranged chronologically on 100- to 500-ft rolls of film.

Data set name - 11.5 MICRON THIR DATA TAPES

NSSDC ID 72-097A-08C, 11.5-MICRON CLOUD RADIANCE TAPE

Time period covered - 12/19/72 TO 02/07/74

Quantity of data - 1866 REELS OF TAPE

This set of brightness temperatures is available on 7-track, 800-bpi, binary magnetic tapes. These tapes, also referred to as Nimbus Meteorological Radiation Tapes (NMRT-THIR), are produced on an IBM 360 computer and contain one orbit of data per file. The first record of each file contains documentation and information describing the orbit. Subsequent records contain brightness temperatures that are measured at 11.5 micrometers with a ground resolution of 8.2 km. There are also locations and time of each observation.

Data set name - 6.7 MICRON THIR DATA TAPES

NSSDC ID 72-097A-08D, 6.7-MICRON CLOUD RADIANCE TAPE

Time period covered - 12/19/72 TO 02/07/74

Quantity of data - 1030 REELS OF TAPE

This set of brightness temperatures is available on 7-track, 800-bpi, binary magnetic tapes. These tapes, also referred to as Nimbus Meteorological Radiation Tapes (NMRT-THIR), are produced on an IBM 360 computer and contain one orbit of data per file. The first record of each file contains documentation and information describing the orbit. Subsequent records contain brightness temperatures that are measured at 6.7 micrometers with a ground resolution of 22.5 km. There are also locations and time of each observation.

NIMBUS 5, SMITH
INFRARED TEMPERATURE PROFILE RADIMETER
(ITPR)

Data set name - INFRARED TEMPERATURE PROFILE RADIANCE
OBSERVATIONS ON MAGNETIC TAPE

NSSDC ID 72-097A-01A, RADIANCE OBSERVATIONS ON TAPE

Time period covered - 02/14/75 TO 09/30/76

Quantity of data - 1 REEL OF TAPE

This data set contains calibrated, earth-located radiances that were supplied by the experimenter's office on 7-track, 800-bpi, binary magnetic tapes. The IR radiances were observed in seven spectral bands (3.7-20 micrometers), mainly in the nadir mode and occasionally in the scanning mode, with a spatial resolution of 21.4 n.m. The original tapes have been compressed by NSSDC onto one 9-track, 1600-bpi tape.

NIMBUS 5, STAELIN
MICROWAVE SPECTROMETER (NEMS)

Data set name - MICROWAVE SPECTROMETER OUTPUT TAPES
(NEMSOT)

NSSDC ID 72-097A-03A, NEMS OUTPUT TAPES (NEMSOT)

Time period covered - 12/18/72 TO 10/31/73

Quantity of data - 31 REELS OF TAPE

The Nimbus E Microwave Spectrometer (NEMS) data are available on 9-track, 1600-bpi magnetic tapes. Also referred to as NEMS Output Tapes (NEMSOT), the data were produced by the experimenter on an IBM 360/165 computer. They contain surface reflectivity, water vapor, liquid water, thickness, temperature at standard pressure levels, surface brightness temperature, and surface type information. Data are grouped into 16-s, earth-viewing frames. National Meteorological Center grid data, interpolated in time and space to the NEMS measurement point, are sometimes included. Each tape contains 2 to 6 days of data. These data are also available on microfiche as data set 72-097A-03B.

Data set name - NEMS OUTPUT TAPES ON MICROFICHE

NSSDC ID 72-097A-03B, NEMS OUTPUT TP(NEMSOT) ON M/FICHE

Time period covered - 12/18/72 TO 12/31/73

Quantity of data - 168 CARDS OF B/W MICROFICHE

This set of Nimbus E Microwave Spectrometer (NEMS) data were generated from the NEMS Output Tapes (NEMSOT; NSSDC ID 72-097A-03B) onto microfiche. It contains printouts of inferred and inverted meteorological parameters, including surface reflectivity, water vapor, liquid water, thickness, temperature at standard pressure levels, surface brightness temperature, and surface type information. Data are grouped into 16-s, earth-viewing frames. National Meteorological Center grid data, interpolated in time and space to the NEMS measurement point, are sometimes included.

Data set name - NEMS BRIGHTNESS TEMPERATURE DATA ON
MICROFICHE

NSSDC ID 72-097A-03C, NEMS BRIGHTNESS TEMP - MICROFICHE

Time period covered - 12/17/72 TO 12/31/73

Quantity of data - 93 CARDS OF B/W MICROFICHE

This set of brightness temperatures was generated by the experimenter on an IBM 360 computer and archived on microfiche

in both graphic and tabular form. Brightness temperatures for each of the five experiment channels (22, 31, 54, 55, and 59 GHz) are displayed in 16-s, earth-viewing frames. The date, time, latitude, and longitude are also printed after every 14 frames. Refer to section 1.7, vol 1, of "The Nimbus 5 Data Catalog" (TRF B17697) for examples.

NIMBUS 5, WILHEIT, JR.
ELECTRICALLY SCANNING MICROWAVE
RADIOMETER (ESMR)

Data set name - ELECTRICALLY SCANNING MICROWAVE
RADIOMETER (ESMR) DATA TAPES

NSSDC ID 72-097A-04A, ESMR CALIB BRIGHT TEMP (CBT) TAPES

Time period covered - 12/11/72 TO 05/16/77

Quantity of data - 103 REELS OF TAPE

This data set contains brightness temperature data on 9-track, 1600-bpi, binary tapes that were generated by IBM 360 computers. It consists of calibrated brightness temperatures measured at 19.35 GHz during each 4-s scan of the earth. Resolution is 25 x 25 km near nadir, degrading to 160 km cross-track by 45 km down-track at the ends of the scan. There is also information on geographic locations and time of observations. Each tape contains 16 days of data.

Data set name - SELECTED ESMR COLOR IMAGES

NSSDC ID 72-097A-04B, SELECTED ESMR COLOR IMAGES

Time period covered - 12/15/72 TO 02/10/73

Quantity of data - 43 COLOR NEGATIVE FRAMES

This data set consists of false color composites that depict terrestrial brightness temperatures in the range of 163 to 310 K. The data are displayed using either polar or Mercator projection, with each frame representing observations from 1 day (13 orbits). Horizontal resolution of the data varies from 25 to 160 km, depending on the sensor's viewing angle. These data are normally available in 8 x 10 in. positive or negative transparencies and prints. An index of the days and areas for which data are available can be found in table 3 of the "The Nimbus 5 Data Catalog," vol 2.

Data set name - ESMR 70 MM PHOTOFACSIMILE FILM

NSSDC ID 72-097A-04C, ESMR 70 MM PHOTOFACSIMILE FILM

Time period covered - 12/11/72 TO 05/14/75

Quantity of data - 9094 FEET OF B/W NEGATIVES

This set of brightness temperatures is supplied by the experimenter on 70-mm photofacsimile film. Each frame contains a geographic grid and two groups of three parallel strips of imagery, each containing one-half the orbital data. The spatial coverage is identical in each group, but each strip has a different dynamic range for its gray scale: 100-200 K, 190-270 K, and 250-300 K, respectively. Further description can be found in section 3, vol 1, of "The Nimbus 5 Data Catalog," TRF B17697.

Data set name - SATELLITE-DERIVED GLOBAL OCEANIC RAINFALL
ATLAS (1973-1974)

NSSDC ID 72-097A-04D, SATELLITE-DERIVED OCEANIC RAINFALL

Time period covered - 12/11/72 TO 02/28/75

Quantity of data - 6 CARDS OF B/W MICROFICHE

This data set contains quantitative maps of rainfall in a hardbound volume. The maps were derived from the relationship between brightness temperatures and rain rates measured over oceans. Rainfall between December 1972 and February 1975 was averaged by week, month, season, and year. From these maps, analysis was made of the patterns of rainfall in the Atlantic, Pacific, and Indian Oceans. The variations in oceanic rainfall and in latent heat release should provide useful inputs to numerical models and to studies of planetary energy and water budgets. The atlas was originally printed as GSFC document X-911-76-116. Subsequently, it was printed as a NASA document, NASA SP-410. Additional references describing methods of deriving rainfall rates are available from NSSDC, namely B23747 and B29545.

Data set name - BRIGHTNESS TEMPERATURE AND SEA ICE

CONCENTRATION DATA ON MAGNETIC TAPE

NSSDC ID 72-097A-04E, BRIGHTNESS TEMP + SEA ICE CONCENT

Time period covered - 01/01/73 TO 12/31/76

Quantity of data - 4 REELS OF TAPE

This data set contains sea ice concentrations and brightness temperatures that were generated by an IBM computer 6250-bpi, EBCDIC magnetic tape. It is derived from measurements taken at 19-GHz frequency. Calibrated brightness temperatures, sea ice concentrations, and ancillary data such as surface air temperature and pressure are presented in a 293 x 293 polar stereographic grid that encloses the 50 deg S. latitude circle and 50 deg N. latitude circle, respectively. The cell size varies from 32 x 32 km at the pole to 28 x 28 km at 50 deg S. Monthly, multiyear monthly, and yearly data were created for 4 yr from 1973 to 1976, except for 7 mo for which there were insufficient data.

***** NIMBUS 6 *****

NIMBUS 6, GILL
LIMB RADIANCE INVERSION RADIOMETER
(LRIR)

Data set name - INVERTED PROFILE OF TEMPERATURE AND OZONE
ARCHIVAL TAPE

NSSDC ID 75-052A-04A, INVR TMP&OZONE PRFL ARCH TP(IPAT)

Time period covered - 06/20/75 TO 01/06/76

Quantity of data - 7 REELS OF TAPE

This data set contains temperature and ozone concentration profiles that were inverted from radiances measured in four spectral regions (9.6-, two 15-, and 23- to 37-micrometer). It provides profiles as a function of pressure for 17 standard levels (from 100 to 0.1 mbar, i.e., from 15 to 64 km). Horizontally, it covers from 64 deg S. to 84 deg N. at 4-deg increments. Both the temperature and upper level (>30 km) ozone data agree well with coincident rocket measurements. This data set is provided by the experimenter on seven 9-track, 1600-bpi, IBM binary magnetic tapes.

NIMBUS 6, MCCULLOCH
TEMPERATURE/HUMIDITY INFRARED RADIOMETER
(THIR)

Data set name - 6.7 MICRON PHOTOFACSIMILE BLACK AND WHITE
70-MM FILM

NSSDC ID 75-052A-12A, 11.5-MICRON CLOUD MONTAGE, FILM

Time period covered - 07/14/75 TO 02/13/77

Quantity of data - 21893 FEET OF B/W NEGATIVES

This set of brightness temperatures, measured at 11.5 micrometers, is available on 70-mm photofacsimile film strips. Positive or negative copies of the film strips are available in uniform density exposure in either transparencies or paper prints. Daytime and nighttime orbital swaths are displayed in strips, each corresponding to a distance approximately from pole to pole and a width from horizon to horizon. The ground resolution of 8.2 km at nadir decreases as the horizontal distance from the sub-satellite track increases. Each film strip is gridded with geographic coordinates and is identified by orbit number, time, and an indication of whether it is daytime (D) or nighttime (N). The strips are arranged chronologically on 100- to 500-ft rolls of film. For a complete description of the data set, see section 2.4.1 in "The Nimbus 6 User's Guide," TRF B23261.

Data set name - 11.5 MICRON PHOTOFACSIMILE BLACK AND
WHITE 70-MM FILM

NSSDC ID 75-052A-12B, 6.7-MICRON CLOUD MONTAGE, FILM

Time period covered - 07/14/75 TO 02/13/77

Quantity of data - 21923 FEET OF B/W NEGATIVES

This set of brightness temperatures, measured at 6.7 micrometers, is available on 70-mm photofacsimile film strips. Positive or negative copies of the film strips are available in uniform density exposure in either transparencies or paper prints. Daytime and nighttime orbital swaths are displayed in strips, each corresponding to a distance approximately from pole to pole and a width from horizon to horizon. The ground resolution of 22.5 km at nadir decreases as the horizontal

distance from the sub-satellite track increases. Each film strip is gridded with geographic coordinates and is identified by orbit number, time, and an indication of whether it is daytime (D) or nighttime (N). The strips are arranged chronologically on 100- to 500-ft rolls of film. For a complete description of the data set, see section 2.4.1 in "The Nimbus 6 User's Guide," TRF B23261.

Data set name - 11.5 MICROMETER TEMPERATURE-HUMIDITY INFRARED RADIOMETER (THIR) DATA ON TAPE

NSSDC ID 75-052A-12C, 11.5-MICRON CLOUD RADIANCE TAPE

Time period covered - 06/18/75 TO 09/14/76

Quantity of data - 242 REELS OF TAPE

This set of brightness temperatures is available on 7-track, 800-bpi, binary magnetic tapes. These tapes, also referred to as Nimbus Meteorological Radiation Tapes (NMRT-THIR), are produced on an IBM 360 computer and contain one orbit of data per file. The first record of each file contains documentation and information describing the orbit. Subsequent records contain brightness temperatures that are measured at 11.5 micrometers with a ground resolution of 8.2 km. There are also locations and time of each observation.

Data set name - 6.7 MICRON THIR DATA ON TAPE

NSSDC ID 75-052A-12D, 6.7-MICRON CLOUD RADIANCE TAPE

Time period covered - 06/18/75 TO 05/06/77

Quantity of data - 111 REELS OF TAPE

This set of brightness temperatures is available on 7-track, 800-bpi, binary magnetic tapes. These tapes, also referred to as Nimbus Meteorological Radiation Tapes (NMRT-THIR), are produced on an IBM 360 computer and contain one orbit of data per file. The first record of each file contains documentation and information describing the orbit. Subsequent records contain brightness temperatures that are measured at 6.7 micrometers with a ground resolution of 22.5 km. There are also locations and time of each observation.

NIMBUS 6, SMITH
HIGH RESOLUTION INFRARED RADIATION
SOUNDER (HIRS)

Data set name - HIRS BRIGHTNESS TEMPERATURES ON 70-MM FILM

NSSDC ID 75-052A-02A, HIRS BRIGHTNESS TEMP ON 70-MM FILM

Time period covered - 06/13/75 TO 05/26/76

Quantity of data - 1200 FEET OF B/W NEGATIVES

These brightness temperatures, supplied by the experimenter, are displayed as black and white images at either full vertical scale (F) or partial vertical scale (P). In the F mode, one orbit of data, i.e., up to 125 min of data from one of the 17 channels (0.69 and 3.7 to 15 micrometers), is output on a single image. In the P mode, data are displayed at twice the vertical scale used in the F mode; two images are usually needed to display all 125 min of data. Spatial resolution at nadir is about 25 km. Conversion from the 18-step gray scale to brightness temperatures can be found in a table in each of the first six volumes of "The Nimbus 6 Data Catalog," TRF B26731.

Data set name - MERGED HIRS/SCAMS RADN, TMP & HUMIDITY SOUNDING DATA FOR GARP DATA SYS TEST (TP)

NSSDC ID 75-052A-02B, HIRS/SCAMS RADN, TMP+HUMIDITY TP

Time period covered - 08/17/75 TO 03/04/76

Quantity of data - 268 REELS OF TAPE

This data set contains calibrated radiances and parameters derived from the High Resolution Infrared Radiometer Sounder (HIRS) and the Scanning Microwave Spectrometer (SCAMS) measurements. Data are saved on an orbit-by-orbit basis. Each orbital set contains: 1) calibrated and earth-located HIRS radiances per field-of-view with 30- to 55-km resolution; 2) calibrated and earth-located SCAMS radiances per field-of-view with 180- to 380-km resolution; and 3) temperature and humidity sounding retrieval data at standard pressure levels from 1000 to 1 mbar, both derived from HIRS and SCAMS radiances. The sounding data sets also include estimates of clear column radiances, surface albedo, cloud parameters, and longwave flux at approximately 300-km resolution. This data set was generated by the former Goddard Applications Directorate on the

Atmospheric and Oceanographic Information Processing System (AOIPS) as a data system test in support of the Global Atmospheric Research Program (GARP). The data set was archived on 9-track, 1600-bpi, binary magnetic tapes. It is also listed as a SCAMS data set (NSSDC ID 75-052A-10C).

NIMBUS 6, STAELIN
SCANNING MICROWAVE SPECTROMETER (SCAMS)

Data set name - SCAMS OUTPUT TAPE OF WATER VAPOR AND TEMPERATURE (SOTA)

NSSDC ID 75-052A-10A, SCAMS OUTPUT TP OF H2O+TMP(SOTA)

Time period covered - 06/15/75 TO 05/29/76

Quantity of data - 87 REELS OF TAPE

This data set of meteorological parameters was prepared by the experimenter's office on an IBM 360/75 computer and then put onto 9-track, 1600-bpi, binary magnetic tapes. It contains: 1) brightness temperatures from five channels (22.235 to 55.45 GHz); 2) retrieved water vapor amount and cloud water content over calm oceans; 3) inverted mean layer temperatures for 1000-500 mbar, 500-250 mbar, and 250-100 mbar; and 4) derived temperatures for 14 standard pressure levels from 1000 to 100 mbar. Spatial resolution on the ground varies from 145 km at nadir to 330 at scan extremes. Normally, one tape contains 4 days of data.

Data set name - SCAMS BRIGHTNESS TEMPERATURES, WATER VAPOR, AND TEMPERATURE ON 70-MM FILM

NSSDC ID 75-052A-10B, SCAMS RADN, H2O+TMP ON 70-MM FILM

Time period covered - 06/15/75 TO 03/02/76

Quantity of data - 1500 FEET OF B/W NEGATIVES

This set of brightness temperatures and retrieved meteorological parameters was supplied by the experimenter as black and white images. Each display contains eight vertical strips of data from one orbit. All strips have the same geographic coverage, but each represents a different parameter. The first three are brightness temperatures for channels 2 (31.65 GHz) and 3 (52.85 GHz) and their differences. The next two represent retrieved water vapor and liquid water from clouds or precipitation over the oceans, respectively. The remaining three strips on the right represent inverted mean temperatures for atmospheric layers 1000-500 mbar, 500-250 mbar, and 250-100 mbar, respectively. The first five parameters are displayed in 18-step gray levels, the values of which can be found in a table in each of the first five volumes of "The Nimbus 6 Data Catalog." The last three parameters are displayed by contour bands (labeled on the side) that are spaced 4 K apart. Spatial resolution on the ground for the parameters varies from 145 km at nadir to 330 km at the scan extremes.

Data set name - MERGED HIRS/SCAMS RADN, TMP & HUMIDITY SOUNDING DATA FOR GARP DATA SYS TEST (TP)

NSSDC ID 75-052A-10C, HIRS/SCAMS RADN, TMP+HUMIDITY TP

Time period covered - 08/17/75 TO 03/04/76

Quantity of data - 268 REELS OF TAPE

This data set contains calibrated radiances and parameters derived from the High Resolution Infrared Radiometer Sounder (HIRS) and the Scanning Microwave Spectrometer (SCAMS) measurements. Data are saved on an orbit-by-orbit basis. Each orbital set contains: 1) calibrated and earth-located HIRS radiances per field-of-view with 30- to 55-km resolution; 2) calibrated and earth-located SCAMS radiances per field-of-view with 180- to 380-km resolution; and 3) temperature and humidity sounding retrieval data at standard pressure levels from 1000 to 1 mbar, both derived from HIRS and SCAMS radiances. The sounding data sets also include estimates of clear column radiances, surface albedo, cloud parameters, and longwave flux at approximately 300-km resolution. This data set was generated by the former Goddard Applications Directorate on the Atmospheric and Oceanographic Information Processing System (AOIPS) as a data system test in support of the Global Atmospheric Research Program (GARP). The data set was archived on 9-track, 1600-bpi, binary magnetic tapes. It is also listed as a HIRS data set (NSSDC ID 75-052A-02B).

NIMBUS 6, WILHEIT, JR.
ELECTRICALLY SCANNING MICROWAVE
RADIOMETER (ESMR)

Data set name - ESMR BRIGHTNESS TEMPERATURES ON 70-MM FILM

NSSDC ID 75-052A-03B, ESMR BRIGHTNESS TMP ON 70-MM FILM

Time period covered - 06/22/75 TO 08/11/77

Quantity of data - 2000 FEET OF B/W NEGATIVES

These brightness temperatures, supplied by the experimenter, are displayed as black and white images at either full vertical scale (F) or partial vertical scale (P). In the F mode, up to 125 min of data are output on a single image. In the P mode, data are displayed at twice the vertical scale used at the F mode, and two images are usually needed to display all 125 min of data. Each display contains swaths of horizontally or vertically polarized data of the 37-GHz channel at a brightness temperature range. Spatial resolution at nadir is 20 km in the cross-track direction and 45 km along track. Conversion from the 18-step gray scale to brightness temperatures can be found in a table in each of the 11 volumes of "The Nimbus 6 Data Catalog," TRF B26731.

***** NIMBUS 7 *****

NIMBUS 7, GLOERSEN
SCANNING MULTISPECTRAL MICROWAVE
RADIOMETER (SMR)

Data set name - ANTENNA TEMPERATURE DATA (TAT) ON
MAGNETIC TAPE

NSSDC ID 78-098A-08A, ANTENNA TEMPERATURE TAPE (TAT)

Time period covered - 10/25/78 TO 06/29/88

Quantity of data - 746 REELS OF TAPE

This experimenter-supplied radiometric data set was generated on an IBM 3081 computer. It contains orbit-by-orbit antenna temperature data (counts measured in five bands from 6.6 to 37 GHz) for horizontal and vertical polarizations separately. It also contains antenna angles, incidence and reflected angles, spacecraft ephemeris, attitude, and housekeeping information. Each TAT contains 3 days of data on a 6250-bpi tape. The TAT data set is the most basic form of the SMR data and is not expected to be of significant use to most investigators.

Data set name - CELL-ALL HORIZONTAL + VERTICAL
POLARIZATION BRIGHTNESS TEMPERATURES DATA

NSSDC ID 78-098A-08B, HOR+VER POLRIZ BRGH TMP(CELL-ALL)

Time period covered - 10/29/78 TO 08/25/87

Quantity of data - 528 REELS OF TAPE

This experimenter-supplied brightness temperature data set was generated from the Antenna Temperature Tape (TAT; NSSDC ID 78-098A-08A) and was produced on 9-track, 1600-bpi, binary magnetic tapes. Each tape contains 3 days of brightness temperatures that are calibrated with prelaunch test data and mapped into evenly spaced cells. Four different cell sizes are used: 156 x 156 km (all ten channels), 97.5 x 97.5 km (all but the dual-polarized 6.6-GHz channels), 60 x 60 km (18-, 21-, and 37-GHz channels), and 30 x 30 km (the dual-polarized 37-GHz channels only). The incidence and reflected sun-boresight angles and geographic and quality flags are also given. All channels show small amounts of drift (<2 K). For the vertically polarized 6.6-GHz channel, the drift is about 3 K. No data were available from the horizontally polarized 21-GHz channel after March 13, 1985. This data set is used to generate other data sets that contain sea surface temperature, wind speeds, sea ice concentration, water vapor, and snow data.

Data set name - PARAMETERS OF 37-GHZ CHANNEL DATA (SEA
ICE CONCENTRATION) ON MAGNETIC TAPE

NSSDC ID 78-098A-08C, SEA ICE, PARM 37-GHZ CHAN(PARM-30)

Time period covered - 10/29/78 TO 10/29/86

Quantity of data - 394 REELS OF TAPE

This experimenter-supplied set of sea ice concentration data was generated by an IBM 3081 computer onto 9-track, 1600-bpi, binary magnetic tapes. It contains sea ice concentration, i.e., the fraction of ice cover in a 30 x 30 km field-of-view, derived from the dual-polarized 37-GHz channel radiances. Data are grouped in scenes, each covering an area of 780 x 780 km. There are 6 days of data per one or two tapes.

Data set name - PARAMETERS OF LAND-OCEAN DATA ON MAGNETIC
TAPE

NSSDC ID 78-098A-08D, PARAM OF LAND AND OCEAN (PARM-L0)

Time period covered - 10/29/78 TO 10/29/86

Quantity of data - 243 REELS OF TAPE

This experimenter-supplied set of land and ocean parameters was generated by an IBM 3081 computer onto 9-track, 1600-bpi, binary magnetic tapes. It contains sea surface temperatures, total atmospheric water vapor, and sea surface wind speeds, all derived from the CELL-ALL (NSSDC ID 78-098A-08B) radiances measured in some of the 10 channels (dual-polarized: 37, 21, 18, 10.7, and 6.6 GHz). Sea surface temperatures are calculated at 156-km resolution. They are computed for areas lying between 55 deg S. and 60 deg N., at least 600 km away from land mass and clear of severe rainstorms. Water vapor retrievals, at 60-km resolution, may not be reliable after the 21-GHz channel was turned off in March 1985. There is no wind speed (at 97.5-km resolution) for the first year. Each PARM-L0 tape contains 6 days of data.

Data set name - PARAMETERS OF SEA ICE AND SNOW AND ICE ON
LAND TAPE (PARM-SS)

NSSDC ID 78-098A-08E, PARAM SEA ICE, SNOW+ICE (PARM-SS)

Time period covered - 10/29/78 TO 10/29/86

Quantity of data - 243 REELS OF TAPE

This experimenter-supplied set of oceanic and cryospheric parameters was generated by an IBM 3081 computer onto 9-track, 1600-bpi, binary magnetic tapes. It contains sea ice concentration (fraction of ice cover in a 60 x 60 km field-of-view), ice surface temperature at 156-km resolution, and multiyear ice fraction in the Northern Hemisphere at 60-km resolution. It also contains land snow, ice sheet, sea surface temperatures, and wind speeds at resolutions of 60 to 156 km. All parameters are derived from the CELL-ALL (NSSDC ID 78-098A-08B) tape radiances measured in some of the 10 channels (dual-polarized: 37, 21, 18, 10.7, and 6.6 GHz). There is one PARM-SS tape every 6 data days.

Data set name - MAPPED PARAMETERS OF SEA ICE AND SNOW AND
ICE ON LAND TAPE (MAP-SS)

NSSDC ID 78-098A-08F, MAPPED PARM SEA ICE+SNOW(MAP-SS)

Time period covered - 10/30/78 TO 10/25/83

Quantity of data - 59 REELS OF TAPE

This data set contains 6-day and monthly averages of sea ice and ice sheet geophysical parameters derived from radiances measured at 6.6 to 37 GHz in both horizontal and vertical polarizations. Each parameter is mapped onto a polar stereographic projection in one of three grid sizes of dimensions 89 x 89, 267 x 267, and 355 x 355. Derived from the PARM-SS and PARM-30 tapes (NSSDC ID 78-098A-08E and 78-098A-08C), this data set was provided by the Nimbus Project on 1600-bpi IBM tapes. There is approximately one tape per month. No data were produced beyond Year 5 (October 1983).

Data set name - MAPPED PARAMETERS OF 37-GHZ CHANNEL DATA
TAPE (MAP-30)

NSSDC ID 78-098A-08G, MAPPED PARM, 37-GHZ CHAN(MAP-30)

Time period covered - 10/30/78 TO 10/30/83

Quantity of data - 60 REELS OF TAPE

This data set contains 6-day and monthly averages of 37-GHz (horizontal polarization channel) brightness temperatures projected on 533 x 533 polar stereographic grids. Generated from the CELL-ALL tapes (NSSDC ID 78-098A-08B), this data set was provided by the Nimbus Project on one 1600-bpi IBM tape per month. No data were produced beyond Year 5 (October 1983).

Data set name - MAPPED PARAMETERS OF LAND-OCEAN DATA
(SMR MAP-L0) ON MAGNETIC TAPE

NSSDC ID 78-098A-08H, MAPPED PARM OF LAND-OCEAN(MAP-L0)

Time period covered - 10/30/78 TO 10/26/83

Quantity of data - 60 REELS OF TAPE

This data set contains 6-day and monthly averages of geophysical parameters such as sea surface temperature, wind, and total atmospheric water vapor over oceans. These

parameters are derived from radiances measured at 6.6 to 37 GHz in both horizontal and vertical polarizations. Each parameter is mapped from 64 deg N. to 64 deg S. in Mercator projection in one of three different grid sizes (vertical x horizontal): 93 x 202, 139 x 303, and 281 x 606. Generated from the PARM-L0 tapes (NSSDC ID 78-098A-08D), this data set was provided by the Nimbus Project on one 1600-bpi IBM tape per month. No data were processed beyond Year 5 (October 1983).

Data set name - GRADIENT RATIO

NSSDC ID 78-098A-08I, GRADIENT RATIO

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 175 COLOR POSITIVE FRAMES

This data set is a subset of the MATRIX-SS data set. It contains maps of 6-day and monthly averages of sea ice surface temperatures, sea ice concentration (percent of ice cover within field-of-view), percent polarization of the 18- and 37-GHz brightness temperatures, and other geophysical parameters over land snow, ice sheet, and sea ice. The maps are displayed in polar stereographic projection. The MATRIX-SS data were produced by the Nimbus Project from the MAP-SS tapes (NSSDC ID 78-098A-08F) onto color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - SEA ICE CONCENTRATION

NSSDC ID 78-098A-08J, SEA ICE CONCENTRATION

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 176 COLOR POSITIVE FRAMES

This data set is a subset of the MATRIX-SS data set. It contains maps of 6-day and monthly averages of sea ice surface temperatures, sea ice concentration (percent of ice cover within field-of-view), percent polarization of the 18- and 37-GHz brightness temperatures, and other geophysical parameters over land snow, ice sheet, and sea ice. The maps are displayed in polar stereographic projection. The MATRIX-SS data set was produced by the Nimbus Project from the MAP-SS tapes (NSSDC ID 78-098A-08F) onto color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - SPECTRAL GRADIENT

NSSDC ID 78-098A-08K, SPECTRAL GRADIENT

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 45 COLOR POSITIVE FRAMES

This data set is a subset of the MATRIX-SS data set. It contains maps of 6-day and monthly averages of sea ice surface temperatures, sea ice concentration (percent of ice cover within field-of-view), percent polarization of the 18- and 37-GHz brightness temperatures, and other geophysical parameters over land snow, ice sheet, and sea ice. The maps are displayed in polar stereographic projection. The MATRIX-SS data set was produced by the Nimbus Project from the MAP-SS tapes (NSSDC ID 78-098A-08F) onto color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - SEA ICE AND OCEAN SURFACE TEMPERATURE

NSSDC ID 78-098A-08L, SEA ICE AND OCEAN SURFACE TEMP

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 45 COLOR POSITIVE FRAMES

This data set is a subset of the MATRIX-SS data set. It contains maps of 6-day and monthly averages of sea ice surface temperatures, sea ice concentration (percent of ice cover within field-of-view), percent polarization of the 18- and 37-GHz brightness temperatures, and other geophysical parameters over land snow, ice sheet, and sea ice. The maps are displayed in polar stereographic projection. The MATRIX-SS data set was produced by the Nimbus Project from the MAP-SS tapes (NSSDC ID 78-098A-08F) onto color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - SEA SURFACE WIND SPEED

NSSDC ID 78-098A-08M, SEA SURFACE WIND SPEED

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 242 COLOR POSITIVE FRAMES

This data set contains maps of 6-day and monthly averages of sea surface wind speeds in Mercator projection. Generated from the MAP-L0 tapes (NSSDC ID 78-098A-08H), this data set is a subset of the MATRIX-L0 data set that was produced by the Nimbus Project on color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - TOTAL ATMOSPHERIC LIQUID WATER OVER OCEAN

NSSDC ID 78-098A-08N, LIQUID WATER OVER OCEANS

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 287 COLOR POSITIVE FRAMES

This data set contains maps of 6-day and monthly averages of total atmospheric liquid water over oceans in Mercator projection. Generated from the MAP-L0 tapes (NSSDC ID 78-098A-08H), this data set is a subset of the MATRIX-L0 data set that was produced by the Nimbus Project on color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - PERCENT POLARIZATION OVER TERRAIN

NSSDC ID 78-098A-08O, PERCENT POLARIZATION OVER TERRAIN

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 173 COLOR POSITIVE FRAMES

This data set contains maps of 6-day and monthly averages of percent polarization of brightness temperatures over terrain in Mercator projection. Generated from the MAP-L0 tapes (NSSDC ID 78-098A-08H), this data set is a subset of the MATRIX-L0 data set that was produced by the Nimbus Project on color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - WATER VAPOR OVER OCEANS

NSSDC ID 78-098A-08P, WATER VAPOR OVER OCEANS

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 289 COLOR POSITIVE FRAMES

This data set contains maps of 6-day and monthly averages of total atmospheric water vapor over oceans in Mercator projection. Generated from the MAP-L0 tapes (NSSDC ID 78-098A-08H), this data set is a subset of the MATRIX-L0 data set that was produced by the Nimbus Project on color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - BRIGHTNESS TEMPERATURE

NSSDC ID 78-098A-08Q, BRIGHTNESS TEMPERATURE

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 186 COLOR POSITIVE FRAMES

This data set contains maps of 6-day averages of 37-GHz (horizontal polarization channel) brightness temperatures in polar stereographic projection. Generated from the MAP-30 tapes (NSSDC ID 78-098A-08C), this data set is a subset of the MATRIX-30 data set that was provided by the Nimbus Project on color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - SEA SURFACE TEMPERATURE OVER OCEANS

NSSDC ID 78-098A-08R, SEA SURFACE TEMP OVER OCEANS

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 290 COLOR POSITIVE FRAMES

This data set contains maps of 6-day and monthly averages of sea surface temperatures over oceans in Mercator projection. Generated from the MAP-L0 tapes (NSSDC ID 78-098A-08H), this data set is a subset of the MATRIX-L0 data set that was produced by the Nimbus Project on color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - SEA ICE MULTI-YEAR ICE FRACTION

NSSDC ID 78-098A-08S, SEA ICE MULTI-YEAR ICE FRACTION

Time period covered - 10/30/78 TO 10/31/82

Quantity of data - 174 COLOR POSITIVE FRAMES

This data set is a subset of the MATRIX-SS data set that contains maps of 6-day and monthly averages of sea ice surface temperatures, sea ice concentration (percent of ice cover within field-of-view), percent polarization of the 18- and 37-GHz brightness temperatures, and other geophysical parameters over land snow, ice sheet, and sea ice. The maps are displayed in polar stereographic projection. The MATRIX-SS data set was produced by the Nimbus Project from the MAP-SS tapes (NSSDC ID 78-098A-08F) onto color, 105-mm film. No data were processed beyond Year 4 (October 1982).

Data set name - CALIBRATED TEMPERATURE DATA (TCT) ON MAGNETIC TAPE

NSSDC ID 78-098A-08W, CALIBRATED TEMPERATURE TAPE (TCT)

Time period covered - 10/25/78 TO 08/20/87

Quantity of data - 536 REELS OF TAPE

This calibrated radiometric data set was generated from the Antenna Temperature Tape (TAT; NSSDC ID 78-098A-08A) and was produced by an IBM 3081 computer onto 9-track, 6250-bpi, binary magnetic tapes. Each tape contains 3 days of brightness temperatures in the TAT resolution. There are also data on the incidence and reflected sun-boresight angles, and geographic and quality flags. The radiances contained in this data set were calibrated based on a model computation; consequently, they differ from those of the CELL-ALL data (NSSDC ID 78-098A-08B), which were derived from prelaunch test data. Conversions from the CELL to the TCT radiances are possible by means of a linear equation.

Data set name - MARGINAL ICE ZONE EXPERIMENT (MIZEX) BRIGHTNESS TEMPERATURE DATA ON TAPE

NSSDC ID 78-098A-08X, MIZEX BRIGHTNESS TEMPERATURE DATA

Time period covered - 11/27/83 TO 04/29/84

Quantity of data - 6 REELS OF TAPE

This set of Scanning Multichannel Microwave Radiometer (SMR) brightness temperature data was supplied by the Marginal Ice Zone Experiment (MIZEX-West) principal investigator in 9-track, 6250-bpi, IBM binary magnetic tapes. Each tape contains 3 days of brightness temperatures that are calibrated based on model computation and are mapped into evenly spaced cells. Four different cell sizes are used: 156 x 156 km (all channels), 97.5 x 97.5 km (all but the dual-polarized 6.6-GHz channels), 60 x 60 km (18-, 21-, and 37-GHz channels), and 30 x 30 km (the dual-polarized 37-GHz channels only). Besides the brightness temperatures and the location coordinates for each cell and band, there are data on the incidence and reflected sun-boresight angles, and geographic and quality flags.

Data set name - HALF-DEGREE CALIBRATED TEMPERATURE MAPS ON MAGNETIC TAPE

NSSDC ID 78-098A-08Y, 0.5-DEG CAL. TEMP MAP (TCT) TAPE

Time period covered - 10/25/78 TO 05/02/87

Quantity of data - 129 REELS OF TAPE

This set of calibrated global brightness temperature maps was produced by an IBM 3081 computer onto 9-track, 6250-bpi, binary magnetic tapes. It was generated from the Calibrated Temperature Tape (TCT; NSSDC ID 78-098A-08W), and each map covers a 6-day period, i.e., 3 days of data. Daytime and nighttime calibrated horizontal and vertical polarization brightness temperatures from 5 bands (37, 21, 18, 10, and 6.6 GHz) are mapped onto grids of 1/2-deg latitude by 1/2-deg longitude (55 x 55 km at the equator). The maps range from 85 deg N. to 85 deg S. and from 180 deg W. to 180 deg E. There is approximately one tape per month.

Data set name - QUARTER-DEGREE CALIBRATED TEMPERATURE MAPS ON MAGNETIC TAPE

NSSDC ID 78-098A-08Z, 0.25-DEG CAL. TEMP MAP (TCT) TAPE

Time period covered - 10/25/78 TO 08/20/87

Quantity of data - 36 REELS OF TAPE

This set of calibrated global brightness temperature maps was produced by an IBM 3081 computer onto 9-track, 6250-bpi, binary magnetic tapes. It was generated from the Calibrated Temperature Tape (TCT; NSSDC ID 78-098A-08W), and each map covers a 6-day period, i.e., 3 days of data. Daytime and nighttime calibrated horizontal and vertical polarization brightness temperatures from 5 bands measured at 37 GHz are mapped onto grids of 1/4-deg latitude by 1/4-deg longitude (27.5 x 27.5 km). The maps range from 85 deg N. to 85 deg S. and from 180 deg W. to 180 deg E. There is approximately one tape per 3 mo.

Data set name - SMR PARMAP DATA ON TAPE

NSSDC ID 78-098A-08a, SMR PARMAP DATA ON TAPE

Time period covered - 11/03/83 TO 10/31/86

Quantity of data - 10 REELS OF TAPE

This experimenter-supplied set of global geophysical parameters was generated by an IBM 3081 computer onto 9-track, 1600-bpi, binary magnetic tapes. The data set, derived from the PARM-LQ (NSSDC ID 78-098A-08D) and PARM-SS (78-098A-08E) data, contains global maps for the following parameters: total sea ice concentration, multiyear ice concentration, sea surface temperature, sea surface wind speed, total atmospheric water vapor, and liquid water content. The maps cover from 85 deg S. to 85 deg N. and 180 deg W. to 180 deg E., with individual map grids representing areas of 1/2 x 1/2 deg each (55 x 55 km). Each grid has the mean value of the parameter expressed in the appropriate units, and each map is for a 6-day period (3 data days). There are about 4 mo of data per tape.

Data set name - MIZEX-WEST BERING SEA SMR 37 GHZ (V) CONCENTRATION MAP FOR FEB. 1983

NSSDC ID 78-098A-08b, MIZEX-W SEA ICE CONCENTRATION

Time period covered - 02/01/83 TO 02/28/83

Quantity of data - 1 REEL OF TAPE

This data set contains sea ice concentration values (fraction of ice cover in 30 x 30 km field-of-view) that are mapped into 293 x 293 uniform grids. Maps are in polar stereographic projections, covering regions between 50 and 90 deg in both hemispheres. Daily values are computed from the observed, ice-free ocean, and consolidated sea ice brightness temperatures are measured by the vertically polarized 37-GHz channel in 30 x 30 km ground resolutions. This data set was provided by the Bering Sea Marginal Sea Ice Zone Experiment (MIZEX-West) principal investigator on one 1600-bpi, IBM binary tape.

Data set name - COLORADO RIVER BASIN SNOW PARAMETER ATLAS (POLARIZATION RATIOS & GRADIENT RATIO) DSK

NSSDC ID 78-098A-08c, COLORADO R SNOW PARM ATLAS DISK

Time period covered - 12/05/78 TO 04/21/86

Quantity of data - 15 DISKS

This set of snow parameters over the Colorado River Basin was supplied by the investigator on 15 5 1/4-in. floppy disks in ASCII format. Snow parameters called the polarization ratio (PR) and gradient ratio (GR) are computed for both daytime and nighttime from brightness temperatures measured at 18 and 37 GHz. The GR values are indicators of the spatial distribution of snow water equivalent in the area snowpack, and they may be used to predict the timing of the onset of snow melting. Both PR and GR are gridded onto a map that covers from 32 to 46 deg N. latitude and 105 to 120 deg W. longitude, with a spatial resolution of 0.2 deg x 0.2 deg. Each map contains 3 data days (or 6 calendar days) of data. Altogether there are 7 yr of data, which span December through May of each year, starting with 1978.

NIMBUS 7, HEATH
SOLAR BACKSCATTER ULTRAVIOLET/TOTAL
OZONE MAPPING SPECTROMETER (SBUV/TOMS)

Data set name - COLUMN OZONE DATA FROM THE TOTAL OZONE MAPPING SPECTROMETER (TOMS) ON MAGNETIC TAPE

NSSDC ID 78-098A-09C, HDTOMS TOTAL OZONE DATA TAPE

Time period covered - 10/31/78 TO 12/17/88

Quantity of data - 189 REELS OF TAPE

This experimenter-supplied ozone data set was generated by an IBM 3081 computer onto 9-track, 6250-bpi magnetic tapes. It contains, scan by scan (35 samples each) and orbit by orbit: 1) total ozone values (in Dobson units), 2) effective Lambertian surface reflectivities, and 3) calibrated albedos measured at six wavelengths from 312.5 to 380 nm. Reflectivities are determined from measurements made by the two longest wavelength bands, whereas total ozone values are determined from the four shorter wavelength bands. The average ground resolution of the data is 66 km. There are 18 HDTOMS tapes per year, each containing 3 weeks worth of data.

Data set name - SOLAR BACKSCATTERED UV (SBUV) TOTAL
& PROFILE OZONE DATA (HDSBUV) ON MAG TAPE

NSSDC ID 78-098A-09D, SBUV TOTAL+PROFIL OZON TP (HDSBUV)

Time period covered - 10/31/78 TO 03/01/88

Quantity of data - 57 REELS OF TAPE

This experimenter-supplied ozone data set was generated by an IBM 3081 computer onto 9-track, 6250-bpi magnetic tapes. It was generated from the SBUV Raw Units Tape (RUT-S; NSSDC ID 78-098A-09F). It contains, scan by scan and orbit by orbit: 1) total ozone (Dobson units, i.e., 1 atm-cm), 2) reflectivities determined mainly from the 339.8-nm channel measurements, 3) ozone mixing ratios (microgram/g), and 4) layer ozone amounts (Dobson units). The mixing ratios are given at 19 pressure levels: 0.3, 0.4, 0.5, 0.7, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.0, 10, 15, 20, 30, 40, 50, 70, and 100 mbar. The layer ozone amounts are given for 12 layers: 0-0.24, 0.24-0.49, 0.49-0.98, 0.98-1.95, 1.95-3.9, 3.9-7.8, 7.8-15.6, 15.6-31, 31-62, 62-125, 125-250, and 250-1000 mbar. The data set also contains calibrated and corrected radiances measured by all 12 channels (from 255.5 to 339.8 nm), and various diagnostic information about the retrievals. There are four tapes per year.

Data set name - RAW UNITS TAPE-TOMS (RUT-T) DATA ON
MAGNETIC TAPE

NSSDC ID 78-098A-09E, RAW UNITS TAPE-TOMS (RUT-T)

Time period covered - 10/31/78 TO 05/21/89

Quantity of data - 818 REELS OF TAPE

This experimenter-supplied set of UV radiance data was generated by an IBM 3081 computer onto binary magnetic tapes. It contains uncorrected, uncalibrated, but earth-located UV radiances in counts measured at six wavelengths from 312.5 to 380.0 nm. There is also housekeeping information, instrument status, and ancillary data such as snow/ice from the Air Force Global Weather Central; terrain height from NOAA; and cloud information from the Nimbus 7 Temperature Humidity Infrared Radiometer (THIR). The data set is not expected to be of significant use to most investigators.

Data set name - RAW UNITS TAPE-SBUV (RUT-S) DATA ON
MAGNETIC TAPE

NSSDC ID 78-098A-09F, RAW UNITS TAPE-SBUV DATA (RUT-S)

Time period covered - 10/31/78 TO 05/21/89

Quantity of data - 545 REELS OF TAPE

This experimenter-supplied data set was generated by an IBM 360 onto 9-track, 6250-bpi magnetic tapes. It contains earth-located but uncorrected, uncalibrated radiances, housekeeping information, and instrument status. There are four types of data record formats, one for each of the four instrument operation modes: normal step scan, wavelength calibration, scan off/cage cam, and continuous scan. In the normal step scan mode, solar radiation backscattered by the atmosphere is measured by a monochromator in 12 wavelengths that range from 255.5 to 339.8 nm. Simultaneous measurements of the effective UV reflectivity of the surface is obtained by a photometer that operates at 343 nm. In the continuous scan mode, measurements are obtained at 80-ms intervals in the range of 160 to 400 nm in 0.2-nm increments. Both the monochromator and photometer measure between 80 deg N. and 80 deg S., with swath widths of 200 km, separated by 26-deg longitude intervals between successive orbits. Besides the radiances, ancillary data such as snow/ice from the Air Force Global Weather Central, terrain height from the National Oceanic and Atmospheric Administration (NOAA), and cloud information from the Nimbus 7 Temperature Humidity Infrared Radiometer (THIR) are also included in the data set. There are 52 tapes per year.

Data set name - SBUV ZONAL MEANS OZONE DATA (ZMT-S) ON
MAGNETIC TAPE

NSSDC ID 78-098A-09K, SBUV ZONAL MEANS OZONE TP (ZMT-S)

Time period covered - 10/31/78 TO 02/29/88

Quantity of data - 11 REELS OF TAPE

This set of experimenter-supplied averaged ozone data was generated by an IBM 370/3081 computer onto 9-track, 1600-bpi magnetic tapes. It contains daily, weekly, monthly, and seasonal averages of total ozone (Dobson units, i.e., atm-cm), ozone mixing ratios (microgram/g), and reflectivities in geodetic coordinates. The input data source is the High Density Solar Backscattered Ultraviolet ozone tapes (HDSBUV; NSSDC ID 78-098A-09D), and values are given for each of the same 19 pressure levels (0.3, 0.4, 0.5, 0.7, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.0, 10, 15, 20, 30, 40, 50, 70, and 100 mbar) for 10-deg latitudinal zones from 80 deg S. to 80 deg N. There are also standard deviations, maximum and minimum values, and sample size. One tape contains an entire year of data.

Data set name - SBUV COMPRESSED PROFILE OZONE DATA ON
TAPE (CPOZ)

NSSDC ID 78-098A-09Q, SBUV CMPRES PROFIL OZONE TP (CPOZ)

Time period covered - 10/31/78 TO 12/31/87

Quantity of data - 12 REELS OF TAPE

This experimenter-supplied ozone data set is written in IBM 3081 binary format onto 9-track, 6250-bpi magnetic tapes. The data set is a condensed version of the High Density Backscattered Ultraviolet ozone tapes (HDSBUV; NSSDC ID 78-098A-09D). Measured radiances (W/cm² cm/AU), absorption coefficients in units of (atm-cm)⁻¹ with base e, and instrument calibration for 13 instrument wavelengths (255.5 to 343.3 nm) are contained in the header record. Data records contain: 1) earth-located total ozone (in Dobson units, with and without IR cloud height information), 2) reflectivity measured mainly by the 339.8-nm channel, 3) ozone mixing ratios (microgram/g), and 4) layer ozone amounts (in Dobson units). The mixing ratios are given at 19 pressure levels: 0.3, 0.4, 0.5, 0.7, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.0, 10, 15, 20, 30, 40, 50, 70, and 100 mbar. The layer ozone amounts are given for 12 layers: 0-0.24, 0.24-0.49, 0.49-0.99, 0.99-1.98, 1.98-3.96, 3.96-7.92, 7.92-15.8, 15.8-31.7, 31.7-63.3, 63.3-127, 127-253, and 253-1013 mbar. There is also solar zenith angle information, a data quality flag, and a volcano contamination index. Designed to be the most convenient SBUV product for investigators, each CPOZ tape normally covers 1 yr of data.

Data set name - DAILY GRIDDED TOTAL OZONE FROM THE TOTAL
OZONE MAPPING SPECTROM (TOMS) ON MAG TP

NSSDC ID 78-098A-09R, DAILY GRID TOMS O3 TP (GRIDTOMS)

Time period covered - 10/31/78 TO 03/31/89

Quantity of data - 16 REELS OF TAPE

This experimenter-supplied set of gridded total ozone data was generated by an IBM 370/3081 computer onto 9-track, 6250-bpi magnetic tapes. Derived from the TOMS ozone data tapes (HDTOMS; NSSDC ID 78-098A-09C), it consists of daily averages of total ozone, reflectivity, and time of observation on geographic grids. Total ozone values are determined from measurements made at four wavelengths (339.8, 331.2, 317.5, and 312.5 nm), and reflectivity is derived from two longer wavelengths (380 and 360 nm). Only good quality data from ascending orbits are selected, averaged, and binned into 1-deg latitude zones that cover from 90 deg S. to 90 deg N. Bands are further divided into grids that vary from 1.25 deg longitude at the equator to 5 deg at the poles. There is one tape per year.

Data set name - SBUV CONTINUOUS SCAN EARTH RADIANCE TAPE
(EARTH)

NSSDC ID 78-098A-09U, SBUV CONT SCAN EARTH RAD TP, EARTH

Time period covered - 11/04/78 TO 10/15/85

Quantity of data - 7 REELS OF TAPE

This experimenter-supplied set of corrected, continuous scan earth radiance data was generated by an IBM 3081 onto 9-track, 6250-bpi magnetic tapes. The data were derived from the raw earth radiance data in the Raw Units Tape - SBUV (RUT-S; NSSDC ID 78-098A-09) and are organized into one file per Bartel (27-day) period. Each file contains the following types of records: 1) actual (postlaunch) wavelengths from about 160 to 400 nm at 0.2-nm intervals; 2) normalized monochromator daytime earth radiances for each of the 1200 wavelengths and normalized photometer earth radiances for each of 16 samples at

343.3 nm; 3) daily mean monochromator solar irradiances at each of the 1200 wavelengths and daily mean photometer solar irradiances at 343.3 nm, as computed for the Continuous-Scan Solar Flux (SUNC) data set (NSSDC ID 78-098A-09V); and 4) a trailer record with quality control information. There is one tape per data year.

Data set name - SBV CONTINUOUS SCAN SOLAR FLUX TAPE (SUNC)

NSSDC ID 78-098A-09V, SBV CONT SCAN SOLAR FLUX TP,SUNC

Time period covered - 11/04/78 TO 10/15/85

Quantity of data - 7 REELS OF TAPE

This experimenter-supplied set of corrected, continuous scan solar flux was generated by an IBM 3081 onto 9-track, 6250-bpi magnetic tapes. The data were derived from the raw solar flux data (RUT-S, NSSDC ID 78-098A-09) and are organized into one file per Bartel (27-day) period. Each file contains the following types of records: 1) normalized monochromator solar irradiances for each of the 1200 wavelengths (from 160 to 400 nm at 0.2-nm intervals), normalized photometer solar irradiances for each of 16 samples at 343.3 nm, and normalized reference diode solar irradiances for 16 samples; 2) orbital and daily mean monochromator solar irradiances, mean photometer solar irradiances at 343.3 nm, standard deviations, maximum and minimum irradiances, and number of samples; 3) daily mean solar irradiances for every 5 nm between 160- and 400-nm wavelengths at 2.5-nm increments (162.5, 165.0, 167.5, ..., and 397.5 nm); and 4) a trailer record with quality control information. There is one tape per data year.

Data set name - SBV DAILY TOTAL OZONE AND PROFILE POLAR STEREOGRAPHIC CONTOUR(PSC) DATA ON TAPE

NSSDC ID 78-098A-09W, SBV TOTAL O3APFL CONTOUR(PSC)TP

Time period covered - 11/07/78 TO 09/30/86

Quantity of data - 7 REELS OF TAPE

This data set contains daily averages of total ozone and profile contours in polar coordinates. The total ozone data consist of daily global total ozone concentration in Dobson units (matm-cm). The profile ozone data consist of ozone mass mixing ratios (micrograms/g) at pressure levels 30, 10, 5, 2, 1, and 0.4 mbar. These data were abstracted from the version 5.0 Compressed Profile Ozone data (CP02; NSSDC ID 78-098A-09Q). They are gridded in the standard National Meteorological Center (NMC) 65 x 65 rectangular array in a polar stereographic projection. The data set is supplied by NOAA on 1600-bpi, IBM binary tapes. There is one tape per year for Years 1-5 and two each for Years 6 and 7.

NIMBUS 7, KYLE
EARTH RADIATION BUDGET (ERB)

Data set name - EARTH RADIATION BUDGET MASTER ARCHIVAL DATA ON MAGNETIC TAPE (MAT)

NSSDC ID 78-098A-07A, RADN BUDGET MASTER ARCH TP,MAT

Time period covered - 11/16/78 TO 11/06/88

Quantity of data - 1209 REELS OF TAPE

This experimenter-supplied set of solar and earth flux data was generated by IBM 360 and 3081 computers onto 9-track, 6250-bpi, binary magnetic tapes. It contains preliminary calibrated radiances and raw digital counts in orbital sequence. Earth-located radiances are measured at 0.2 to 50 micrometer wavelengths by four fixed wide-field-of-view channels and at 0.2 to 4 and 5 to 50 micrometer wavelengths by eight scanning narrow-field-of-view (NFOV) channels. The NFOV footprint is 85 x 85 km at nadir. Solar radiation in raw counts is obtained from 10 solar channels. There are also orbital and daily summary records, data quality flags, housekeeping information, and a calibration adjustment table. Data are arranged in 16-s records, and there are usually 3 days of data per 6250-bpi tape.

Data set name - SOLAR AND EARTH FLUX DATA ON MAGNETIC TAPE (SEFDT)

NSSDC ID 78-098A-07B, SOLAR + EARTH FLUX DATA TP(SEFDT)

Time period covered - 11/01/78 TO 04/30/89

Quantity of data - 115 REELS OF TAPE

This experimenter-supplied set of solar and wide-field-of-view earth flux data was generated by IBM 3081

computers onto 9-track, 1600-bpi magnetic tapes. A subset of the Master Archival Tape (MAT; NSSDC ID 78-098A-07A), it contains both raw counts and recalibrated radiances and irradiances measured in the 0.2 to 50 micrometer range. The latitude and longitude of the earth pixels are given. For the first 19 mo, calibration was directly tied to that of the longwave narrow-field-of-view channels. Following the failure of the scanner, an optimized scheme was used. There is one tape per month.

Data set name - MAPPED RADIATION DATA MATRIX ON MAGNETIC TAPE

NSSDC ID 78-098A-07C, MAPPED RADN DATA MATRIX TP

Time period covered - 11/16/78 TO 05/05/87

Quantity of data - 104 REELS OF TAPE

This data set contains gridded, daily and monthly averaged earth radiation budget parameters generated by an IBM 3081 computer onto 9-track, 1600-bpi magnetic tapes. The data are extracted from the Master Archival Tape (MAT; NSSDC ID 78-098A-07A). Outgoing longwave radiation (OLR), albedo, and net radiation are calculated from measurements made by the fixed wide-field-of-view channels and the 20-mo scanning narrow-field-of-view channels. Different values for the ascending and descending nodes, as well as some statistical information, are given for 2070 equal areas, each approximately 500 km x 500 km. Besides the daily averages, there are the 6-day and monthly gridded averages, and the 6-day and monthly averages in Mercator/polar stereographic map projection for microfilm production. The data set was supplied by the Nimbus Project on one tape per month.

Data set name - ZONAL MEANS INSOLATION AND EARTH RADIATION DATA ON MAGNETIC TAPE (ZMT)

NSSDC ID 78-098A-07E, ZONAL MEANS RADN TAPE (ZMT)

Time period covered - 11/16/78 TO 11/30/85

Quantity of data - 15 REELS OF TAPE

This data set contains zonal means of earth radiation budget parameters. They include insolation, outgoing longwave radiation (OLR), albedo, and net radiation calculated from the narrow-field-of-view measurements. Data are calculated for 4.5-deg latitude zones on a daily, 6-day, monthly, and seasonal basis. The data set was derived by the Nimbus Project from the ERB SEFDT, MATRIX, and SAVER tapes (NSSDC ID 78-098A-07B, 78-098A-07C, and 78-098A-07I) on an IBM 3081 computer. There are two 9-track, 1600-bpi tapes per year.

Data set name - SUB-TARGET RADIANCE DATA ON MAGNETIC TAPE (STRT)

NSSDC ID 78-098A-07G, SUB-TARGET RADIANCE TAPE (STRT)

Time period covered - 11/16/78 TO 01/30/80

Quantity of data - 47 REELS OF TAPE

This data set contains earth-emitted and reflected radiances that were observed at 0.2- to 4- and 5- to 50-micrometer wavelengths by the narrow-field-of-view scanner from a number of viewing angles. The calibrated radiances and ancillary information are sorted into 2070 target areas (TA), which are approximately 500 x 500 km each and are further divided into nine subtarget areas (STA). Ancillary information includes cloud cover data from the first version of the Nimbus 7 Temperature and Humidity Infrared Radiometer (THIR) Cloud-ERB type (CLE) and topographic and geographic data. The data set was supplied by NOAA on 6250-bpi IBM tapes, each containing 6 days of data for a total of 272 days.

Data set name - POST MAT CALIBRATION DATA ON MAGNETIC TAPE (DELMAT)

NSSDC ID 78-098A-07H, POST MAT CALIBRATION TP (DELMAT)

Time period covered - 11/01/78 TO 11/05/87

Quantity of data - 106 REELS OF TAPE

This data set contains calibration adjustments for the correction of earth radiances measured by the wide-field-of-view channels. New calibration adjustment algorithms were developed after the scanner, which was used for inflight calibration, failed 20 mo after launch. In addition to the calibration adjustments, the data set contains the uncorrected and corrected irradiances. Designed to complement rather than replace the Master Archival Tapes (MAT; NSSDC ID 78-098A-07A), the DELMAT is supplied by the Nimbus Project on one 1600-bpi, IBM magnetic tape per month.

Data set name - SEASONAL AVERAGES OF RADIATION BUDGET
DATA ON MAGNETIC TAPE (SAVER)

NSSDC ID 78-098A-07I, SEASONAL AVG RADN BUDGET (SAVER)

Time period covered - 12/02/78 TO 03/01/86

Quantity of data - 29 REELS OF TAPE

This data set contains earth radiation budget parameters such as outgoing longwave radiation (OLR), albedo, and net radiation on a seasonal basis. The seasonal intervals are December through February, March through May, June through August, and September through November. Separate wide-field-of-view and narrow-field-of-view scanner data (when available) are presented globally for 2070 fixed target areas, each approximately 500 x 500 km. In addition to the world grids, data are also given in the form of Mercator/polar stereographic projection matrices for microfilm production. The data set is provided by the Nimbus Project on four 9-track, 1600-bpi IBM tapes per year.

Data set name - ERB SOLAR ANALYSIS DATA ON MAGNETIC TAPE
(ESAT)

NSSDC ID 78-098A-07L, ERB SOLAR ANALYSIS TAPE (ESAT)

Time period covered - 11/16/78 TO 03/31/86

Quantity of data - 1 REEL OF TAPE

This experimenter-supplied composite set of solar data was generated by an IBM 3081 computer onto a 9-track, 1600-bpi magnetic tape. The data set was derived from the 10 ERB solar channel (0.2 to 50 micrometers) measurements that are contained in the Solar and Earth Flux Data Tapes (SEFDT; NSSDC 78-098A-07B). It includes orbital and daily mean solar irradiances and certain common solar activity indicators such as the Zurich relative sunspot numbers, Ottawa 2800-MHz solar flux, daily calcium plage index, geomagnetic (Ap) index, and solar plage data. All data are archived on one tape.

Data set name - MATRIX MONTHLY AVERAGED SUMMARY (EMST)
DATA ON MAGNETIC TAPE

NSSDC ID 78-098A-07D, MATRIX MONTHLY AVG SUMRY TP (EMST)

Time period covered - 11/01/78 TO 10/31/86

Quantity of data - 2 REELS OF TAPE

This data set contains gridded monthly averages of earth radiation budget parameters generated by an IBM 3081 computer onto 9-track, 6250-bpi magnetic tapes. The data are extracted from the monthly ERB MATRIX tapes (NSSDC ID 78-098A-07C). They include outgoing longwave radiation (OLR), albedo, net radiation, and many statistical parameters. Data are calculated for 2070 equal areas, each approximately 500 km x 500 km. The first 20 mo of data contain separate measurements in the spectral range of 0.2 to 50 micrometers. Beginning June 22, 1980, no NFOV data are available. An improved wide-field-of-view, inflight calibration adjustment table known as the Global Calibration Adjustment Table (CAT) was developed for all subsequent measurements. Presently, one tape covering November 1982 to October 1985 has been prepared with the Global CAT. Eventually, consistent processing will be extended back to the November 1980 data.

NIMBUS 7, MCCORMICK
STRATOSPHERIC AEROSOL MEASUREMENT-II
(SAM-II)

Data set name - RAW DATA ARCHIVE TAPE (RDAT) DATA ON
MAGNETIC TAPE

NSSDC ID 78-098A-06A, RADIANCE DATA ARCHIVE TAPE (RDAT)

Time period covered - 11/01/78 TO 10/31/85

Quantity of data - 84 REELS OF TAPE

This set of radiance data was generated by LaRC in an IBM representation on 9-track, 1600-bpi magnetic tapes. It contains earth-located IR radiance measured at 1 micrometer for each spacecraft sunrise and sunset as a function of time. Measurements are obtained only in regions between 64 and 80 deg in both hemispheres. There are 12 RDAT tapes per year.

Data set name - BETA-AEROSOL NUMBER DENSITY ARCHIVE
DATA ON MAGNETIC TAPE

NSSDC ID 78-098A-06B, BETA-AEROSOL NO DEN ARCH (BANAT)

Time period covered - 11/01/78 TO 11/01/87

Quantity of data - 108 REELS OF TAPE

This data set contains aerosol extinction profiles and is provided by the experimenter in an IBM representation on 9-track, 1600-bpi magnetic tapes. The data set is generated from the RDAT (NSSDC ID 78-098A-06A). For each sunrise and sunset event, 1-km-resolution vertical profiles of aerosol coefficients of extinction are given above an earth tangent point between 64 and 80 deg in both hemispheres. Profiles of molecular extinction coefficients, total extinction ratios, and aerosol number density, along with error bars, are also given. There are 12 BANAT tapes per year.

NIMBUS 7, RUSSELL, 3RD/GILLE
LIMB INFRARED MONITOR OF THE
STRATOSPHERE (LIMS)

Data set name - LIMS INVERTED PROFILE ARCHIVAL TAPE (LIMS/
LAIPAT) OF TEMPERATURES AND MIXING RATIOS

NSSDC ID 78-098A-01A, TEMP+MIX RATIO PROFIL TP (LAIPAT)

Time period covered - 10/25/78 TO 05/29/79

Quantity of data - 36 REELS OF TAPE

This experimenter-supplied data set from LaRC is known as Inverted Profile Archival Tape (LAIPAT). It contains corrected IR radiance profiles that were generated by an IBM 360 computer onto 9-track, 1600-bpi, binary magnetic tapes. Selective radiances from the Radiance Archival Tapes (RAT; NSSDC ID 78-098A-01B) are corrected and profiled at 4-deg latitude zones from 64 deg S. to 84 deg N. Vertical coverage extends from approximately 10 to 50 km, with the ozone channel measuring through the lower mesosphere to 65 km. The data set also contains inverted daily profiles, about 1000 of temperature and 1000 each of mixing ratios for ozone, water vapor, nitric acid, and nitrogen dioxide, all as a function of pressure. In addition, earth location, time, cloud top, and housekeeping information are included. Each LAIPAT tape contains 2 to 6 days of data, covering the period from October 26, 1978, through May 28, 1979.

Data set name - LIMS RADIANCE ARCHIVAL DATA (LIMS/RAT)
ON MAGNETIC TAPE

NSSDC ID 78-098A-01B, RADIANCE ARCHIVAL TAPE (RAT)

Time period covered - 10/25/78 TO 05/30/79

Quantity of data - 205 REELS OF TAPE

This experimenter-supplied IR radiance data set is on 9-track, 1600-bpi, binary magnetic tapes created on an IBM 360 computer. It contains calibrated and earth-located radiances, as well as housekeeping information, instrument status, and data quality information. Radiances are measured both day and night in six spectral ranges and are profiled at 4-deg zones from 64 deg S. to 84 deg N. Vertical coverage extends from approximately 10 to 50 km, with the ozone channel measuring through the lower mesosphere to 65 km. Though calibrated, the radiances are not corrected for instrument effects such as field-of-view, electronic delay, and spacecraft motion. There is one Radiance Archival Tape (RAT) per data day covering the period from October 26, 1978, through May 30, 1979, minus 15 off days.

Data set name - LIMS MAP ARCHIVAL TAPE (LIMS/LAMAT) OF
TEMP, MIXING RATIOS & GEOPOTENTIAL HGHTS

NSSDC ID 78-098A-01C, TEMP, MIX RATIO, HT. MAPS (LAMAT)

Time period covered - 10/25/78 TO 05/29/79

Quantity of data - 9 REELS OF TAPE

This experimenter-supplied data set from LaRC, known as the Map Archival Tape (LAMAT), is on 9-track, 1600-bpi, binary magnetic tapes. It contains daily global maps of six parameters (temperature, ozone, nitrogen dioxide, water vapor, nitric acid, and geopotential height) at 18 pressure levels (0.05, 0.1, 0.2, 0.4, 0.5, 0.7, 1, 1.5, 2, 3, 5, 7, 10, 16, 30, 50, 70, and 100 mbar). These maps are stored in the form of Fourier coefficients for each parameter, latitude zone, and pressure level. There are 38 latitudes spaced at 4-deg intervals from 64 deg S. to 84 deg N. The coefficients, actually standard deviations, are developed from the LAIPAT inverted profile data (NSSDC ID 78-098A-01A) using an optimal-estimation Kalman filter technique. They are recorded for spacecraft ascending node (day or 1200 GMT synoptic times), descending node (night or 0000 GMT synoptic times), and combined ascending and descending nodes, which allows diurnal variations to be studied. In general, only temperature and

ozone are mapped at all 18 pressure levels. Maps for the other four parameters usually stop at altitudes where signal-to-noise values become inadequate for data reduction. In addition, the analyses at 70 and 100 mbar are often missing at tropical latitudes because of clouds rendering the results unreliable. Each tape contains maps for 23 to 30 data days. Altogether there are eight LAMAT tapes covering the period October 26, 1978, to May 28, 1979.

Data set name - PROFILES OF RADIANCE DATA ON MAGNETIC TAPE (PROFILE-R)

NSSDC ID 78-098A-01F, RADIANCE PROFILE TAPE (PROFILE-R)

Time period covered - 10/25/78 TO 05/30/79

Quantity of data - 8 REELS OF TAPE

This radiance data set consists of 9-track, 1600-bpi, binary magnetic tapes created on an IBM 360 computer. Daily vertical profiles of radiance across the earth's atmospheric limb were derived from the Radiance Archival Tapes (RAT; NSSDC ID 78-098A-01B). Measurements are obtained, as a function of tangent height (or scan angle), once every 12 s in each of the six spectral bands (two 15-micrometer CO₂ bands, an 11.3-micrometer HNO₃ band, a 9.6-micrometer O₃ band, a 6.9-micrometer H₂O band, and a 6.2-micrometer NO₂ band) from the highest pressure level to the lowest in steps of 0.1 km. There are eight tapes covering the period October 26, 1978, to May 28, 1979, each containing up to 62 days of profiles.

Data set name - LIMS SEASONAL MAP ARCHIVAL TAPE (LASHMAT) OF TEMP, MIXING RATIOS+GEOPOTENTIAL HEIGHT

NSSDC ID 78-098A-01L, 90-D TEMP, MIX RAT, HT MAPS (LASHMAT)

Time period covered - 10/25/78 TO 05/29/79

Quantity of data - 1 REEL OF TAPE

This experimenter-supplied data set, which was created by LaRC on a 9-track, 1600-bpi, binary magnetic tape, contains maps of monthly and seasonal means of six parameters (temperature, ozone, nitrogen dioxide, water vapor, nitric acid, and geopotential height) at 18 pressure levels (0.05, 0.1, 0.2, 0.4, 0.5, 0.7, 1, 1.5, 2, 3, 5, 7, 10, 16, 30, 50, 70, and 100 mbar). Daily Map Archival Tape (LAMAT; NSSDC ID 78-098A-01C) results stored in the form of Fourier coefficients for each parameter, latitude zone, and pressure level are averaged over periods of 1 or 3 mo, respectively. There are 38 latitudes spaced at 4-deg intervals from 64 deg S. to 84 deg N. The coefficients are developed from the Inverted Profile Archival Tape (LAIPAT; NSSDC ID 78-098A-01A) data using an optimal-estimation Kalman filter technique. They are recorded for spacecraft ascending node (day or 1200 GMT synoptic times), descending node (night or 0000 GMT synoptic times), and combined ascending and descending nodes. In general, only temperature and ozone are mapped at all 18 pressure levels. In addition, the analyses at 70 and 100 mbar are often missing at tropical latitudes because of clouds rendering the results unreliable. There is one LASHMAT tape covering October 26, 1978, to May 28, 1979.

NIMBUS 7, STOWE
TEMPERATURE/HUMIDITY INFRARED RADIOMETER
(THIR)

Data set name - 11.5-MICRON THIR PHOTOFACSIMILE FILM

NSSDC ID 78-098A-10A, 11.5-MICRON CLOUD MONTAGE

Time period covered - 06/23/79 TO 05/07/85

Quantity of data - 43355 FEET OF B/W NEGATIVES

This experimenter-supplied set of daily world montages of cloud data is available on 241-mm (9.5-in.) film. Each montage contains either a daytime or nighttime assembly of individual swaths (13 or 14) of Temperature Humidity Infrared Radiometer (THIR) data for the 11.5-micrometer channel data. Beneath the display are orbit numbers, nodal GMT and longitudes, and a gray scale.

Data set name - 6.7-MICRON THIR PHOTOFACSIMILE FILM

NSSDC ID 78-098A-10B, 6.7-MICRON CLOUD MONTAGE

Time period covered - 06/23/79 TO 05/07/85

Quantity of data - 43355 FEET OF B/W NEGATIVES

This experimenter-supplied set of daily world montages of cloud data is available on 241-mm (9.5-in.) film. Each montage

contains either a daytime or nighttime assembly of individual swaths (13 or 14) of Temperature Humidity Infrared Radiometer (THIR) data for the 6.7-micrometer channel data. Beneath the display are orbit numbers, nodal GMT and longitudes, and a gray scale.

Data set name - CALIBRATED LOCATED RADIANCE DATA ON MAGNETIC TAPE (CLDT)

NSSDC ID 78-098A-10C, CALIB.-LOCATED RAD DATA TP (CLDT)

Time period covered - 10/30/78 TO 05/09/85

Quantity of data - 4478 REELS OF TAPE

This experimenter-supplied radiance data set was generated in IBM representation onto 9-track, 1600-bpi magnetic tapes. It contains scan-by-scan and orbit-by-orbit calibrated radiance data measured by the 6.7- and 11.5-micrometer channels, earth-location information, data quality flags, and engineering and housekeeping data. There is also a documentation record in the beginning of each data file in which orbit number, time, nodal position, solar declination, and two radiance-to-temperature conversion tables are given. Each tape contains half a day's data.

Data set name - CLOUD DATA IN ERB FORMAT (NCLE) ON MAGNETIC TAPE

NSSDC ID 78-098A-10D, CLOUD DATA ERB FORMAT (NCLE)

Time period covered - 10/30/78 TO 03/31/85

Quantity of data - 312 REELS OF TAPE

This experimenter-supplied cloud data set was generated in IBM representation on 9-track, 1600-bpi magnetic tapes. The data set was generated from the Temperature Humidity Infrared Radiometer (THIR) 11.5-micrometer radiances (CLDT; NSSDC ID 78-098A-10C), the Total Ozone Mapping Spectrometer (TOMS) derived UV (0.36- and 0.38-micrometer) reflectivities (HDTOMS; NSSDC ID 78-098A-09C), and the Air Force surface temperature. Data consist of total cloud amounts in percent coverage; cloud amounts at three altitudes: low (below 2 km), middle (2 to 7 km depending on latitude), and high (above the middle cloud layer); percent cirrus and deep convective cloudiness; and surface radiances. Data are averaged orbit by orbit to the Nimbus 7 Earth Radiation Budget (ERB) experiment subtarget areas (STA), approximately 165 km x 165 km each. NCLE is a new version of CLE, with improved cloud estimation. There is one tape per week starting in April 1979, when the Air Force surface temperature information began.

Data set name - CLOUD DATA TOMS FORMAT (BCLT) ON MAGNETIC TAPE

NSSDC ID 78-098A-10E, CLOUD DATA TOMS FORMAT (BCLT)

Time period covered - 10/31/78 TO 10/31/84

Quantity of data - 893 REELS OF TAPE

This experimenter-supplied cloud data set was generated in IBM representation on 9-track, 1600-bpi magnetic tapes. The data set was generated from the Temperature Humidity Infrared Radiometer (THIR) 11.5-micrometer radiances (CLDT; NSSDC ID 78-098A-10C), the Total Ozone Mapping Spectrometer (TOMS) derived UV (0.36- and 0.38-micrometer) reflectivities (HDTOMS; NSSDC ID 78-098A-09C), and the Air Force surface temperature. Similar to the THIR NCLE (NSSDC ID 78-098A-10D), the data set contains total cloud amounts, in percent coverage; cloud amounts at three altitudes: low (below 2 km), middle (2 to 7 km depending on latitude), and high (above the middle cloud layer); cirrus and deep convective clouds; and mean and RMS deviations of cloud and surface radiances. Data are averaged orbit by orbit onto each of the Nimbus 7 TOMS IFDV, which vary from 50 km x 50 km to 200 km x 200 km. BCLT is a new version of CLT, with improved cloud estimation. There is one tape per week, starting in April 1979 when the Air Force surface temperature information began.

Data set name - CLOUD DATA (C-MATRIX) ON MAGNETIC TAPE

NSSDC ID 78-098A-10F, CLOUD DATA (C-MATRIX)

Time period covered - 04/01/79 TO 03/31/85

Quantity of data - 7 REELS OF TAPE

This experimenter-supplied cloud data set was generated by an IBM 3081 computer on 9-track, 6250-bpi magnetic tapes. The data set was generated from the Temperature Humidity Infrared Radiometer (THIR) NCLE tapes (NSSDC ID 78-098A-10D). It consists of more than 100 parameters, which include daily (local noon and midnight) and monthly averages of total, low

(below 2 km), middle (2 to 7 km depending on latitude), and high (above the middle cloud layer) cloud amount in percent coverage; clear area radiances; and spatial and temporal variances. These parameters are computed for the 2070 Nimbus 7 Earth Radiation Budget (ERB) target areas, each with an area of approximately 500 km x 500 km. Derived zonal, hemispheric, and global values are also given for most parameters. There is one C-MATRIX tape per year, starting in April 1979 when the Air Force surface temperature information began.

NIMBUS 7, TAYLOR
STRATOSPHERIC AND MESOSPHERIC SOUNDER
(SAMS)

Data set name - RADIANCE ARCHIVE DATA ON MAGNETIC TAPE

NSSDC ID 78-098A-02A, RADIANCE ARCHIVE TAPE (RAT)

Time period covered - 10/23/78 TO 06/13/83

Quantity of data - 196 REELS OF TAPE

This experimenter-supplied radiance data set is written on 9-track, 1600-bpi magnetic tapes in 16-bit integers. It contains uncalibrated and calibrated data frame by frame along the orbit, housekeeping functions, derived tangent point pressures, relevant spacecraft functions, and retrieved temperature profiles at 2.5-deg intervals along the tangent track. Each tape covers 6 days of data.

Data set name - GRIDDED RETRIEVAL TEMPERATURE DATA ON
MAGNETIC TAPE

NSSDC ID 78-098A-02B, GRIDDED TEMPERATURE TAPE (GRID-T)

Time period covered - 12/24/78 TO 06/09/83

Quantity of data - 4 REELS OF TAPE

This data set of retrieved temperatures, originally supplied by experimenters in DEC format, was copied by the Nimbus Project onto 9-track, 6250-bpi magnetic tapes in IBM 3081 binary integers. It consists of two kinds of data blocks: block types 7402 and 7403. For both types, the earth's surface is divided into 2.5-deg latitude by 10-deg longitude grids that extend from 50 deg S. to 67.5 deg N. Block type 7402 contains retrieved temperatures averaged over day and night at 62 pressure levels, which range from $\ln(P_0/P)=1.4$ to 13.6, with an increment of 0.2. P_0 is 1000 mbar and P is the pressure in mbar. Zonal mean and climatology values are also given. Block type 7403 contains either temperatures or temperature errors averaged over day and night at 10 pressure levels: 100, 30, 10, 3, 1, 0.3, 0.1, 0.03, 0.01 and 0.003 mbar. There are some data discontinuities caused by changes in the operation modes of the instrument (CO2 channels C1 and A1). Users should refer to a tabular listing of modes for each nominal day in the "Nimbus 7 Stratospheric and Mesospheric Sounder (SAMS) Experiment Data User's Guide," which also contains an article by C.D. Rodgers et al. on the method of temperature retrieval. Each GRID-T tape contains approximately 1 calendar yr of data.

Data set name - ZONAL MEANS COMPOSITION DATA ON MAGNETIC
TAPE

NSSDC ID 78-098A-02C, ZONAL MEANS N2O, CH4 TAPE (ZMT-G)

Time period covered - 01/01/79 TO 12/30/81

Quantity of data - 1 REEL OF TAPE

This data set of zonal mean retrieved mixing ratios of methane and nitrous oxide, originally supplied by experimenters in DEC format, is written on a single 9-track, 6250-bpi magnetic tape in IBM 3081 binary integers. The earth's surface is divided into 2.5-deg latitudinal zones that extend from 50 deg S. to 67.5 deg N. Retrieved mixing ratios are averaged over day and night at 31 pressure levels, which range from $\ln(P_0/P)=3.0$ to 9.0, with an increment of 0.2. P_0 is 1013.25 mbar and P is the pressure in mbar. Mixing ratio errors are also given. Because the methane and the nitrous oxide channels cannot function simultaneously, only one type of measurement is made for any nominal day. Users should refer to a tabular listing of modes for each nominal day in the "Nimbus 7 Stratospheric and Mesospheric Sounder (SAMS) Experiment Data User's Guide," which also contains an article by C.D. Rodgers et al. on the method of composition retrieval.

***** NOAA 9 *****

NOAA 9, BARKSTROM
EARTH RADIATION BUDGET EXPERIMENT (ERBE)

Data set name - RAW ARCHIVE TAPE (RAT) IMAGES ON OPTICAL
DISK

NSSDC ID 84-123A-05B, RAW ARCH TP(RAT) IMAGES ON OP DSK

Time period covered - 01/23/85 TO 07/31/87

Quantity of data - 10 DISKS

This raw data set was supplied by the ERBE science team as tape images on 12-in. WORM optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put onto unlabeled magnetic tapes. This data set, called the Raw Archival Tape (RAT), contains scanner and nonscanner raw radiometric counts. It also contains telemetry, ephemeris, and attitude data merged together sequentially by time. The scanner measurements are obtained from three detectors that scan the earth perpendicular to satellite ground track from horizon to horizon in three spectral ranges: total (0.2 to 50 micrometers), shortwave (0.2 to 5.0 micrometers), and longwave (5.0 to 50 micrometers). Each scan lasts 4 s and covers a hexagonal IFOV of 3 deg by 4.5 deg. The nonscanner measurements are obtained from four earth-viewing channels and a solar monitor. The earth-viewing channels provide total waveband radiation and shortwave radiation data in two spatial resolutions: a horizon-to-horizon view (WFOV), approximately 135 deg, and a view limited to 10 deg or 1000 km (MFOV). Data measured by the solar monitor are total radiation from the sun. A set of nonscanner measurements is made once every 0.8 s, with a time gap of 0.1 s in between. Earth locations of the field-of-view are provided for all radiometric measurements. Additional information includes the time of the record; spacecraft position, velocity, and attitude data; sun position data; housekeeping data in both counts and converted values; and a complete set of radiometric, geometric, and status flags describing the ERBE instruments. These data are grouped into 16-s records, with one tape per day and one optical disk per month.

Data set name - PROCESSED ARCHIVE TAPE (PAT) IMAGES ON
OPTICAL DISK

NSSDC ID 84-123A-05C, PROC ARCH TP(PAT)IMAGES ON OP DSK

Time period covered - 04/01/85 TO 10/31/86

Quantity of data - 5 DISKS

This set of earth radiances was supplied by the ERBE science team as tape images on 12-in. WORM optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. The data set contains scanner and nonscanner radiometric and unfiltered measurements, viewing angles at the top of the atmosphere, and estimates of the radiant exitance based on these measurements. The time, spacecraft position, velocity vectors, sun position, and flags are also given for each file, which contains 1 day of data. There is one optical disk per month.

Data set name - TOTAL SOLAR IRRADIANCE ON HARDCOPY

NSSDC ID 84-123A-05D, TOTAL SOLAR IRRADIANCE

Time period covered - 03/01/85 TO 12/31/86

Quantity of data - 2 PAGES OF UNBOUND HARDCOPY

This set of total solar irradiance data was supplied by the experimenter team to NASA's Climate Data System on hard copy. The solar constants were measured by the solar monitor (0.2-50 micrometers) every 2 weeks during periods of solar calibration of the earth-viewing instruments. The measurements are normalized to one astronomical unit and corrected for any off-axis positioning of the sun. Accuracy is better than 0.5%. The data set is available on line in Common Data Format (CDF). This data set is collocated with the total solar irradiance data from the Earth Radiation Budget Satellite (ERBS; NSSDC ID 84-108B-01D).

Data set name - SOLAR INCIDENCE DATA (S-2) ON OPTICAL
DISK

NSSDC ID 84-123A-05E, SOLAR INCIDENCE (S-2) ON OP DISK

Time period covered - 04/01/85 TO 10/31/86

Quantity of data - 3 DISKS

This set of solar data was supplied by the ERBE science team as tape images on 12-in. optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains radiometric measurements in counts that were taken by the solar monitor channel of the nonscanner instrument during each 20-min solar calibration period. Besides the radiometric data, there are also nonscanner housekeeping data in counts and engineering units, the solar monitor cone angle, and flags. There may be up to four measurement periods per month, and one tape contains 1 mo of data. This data set is archived on the Processed Archive Tape (PAT) optical disks of the month.

Data set name - GRIDDED EARTH RADIATION BUDGET DATA (S-4)
ON OPTICAL DISK

NSSDC ID 84-123A-05F, GRIDDED EARTH RAD BUDGET OD (S-4)

Time period covered - 04/01/85 TO 10/31/86

Quantity of data - 5 DISKS

This set of earth radiation budget data was supplied by the ERBE science team as tape images on 12-in. optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains averages of estimates of longwave, shortwave, and net radiant exitance at the top of the atmosphere and albedo. One set of estimates includes all narrow-field-of-view (NFOV) scanner measurements. The second set contains only those measurements identified as viewing clear sky areas. Four more sets of estimates contain nonscanner measurements (MFOV and WFOV) that are reduced with both the shape factor technique and the numerical filter technique. There are four types of spatial averaging: 2.5 deg, 5.0 deg, 10.0 deg regions and zones, and global averaging. There are also three different time periods of averaging: daily, monthly, and monthly hourly. One tape contains 1 mo of data from the NOAA 9 spacecraft or from combined spacecraft (ERBS, NOAA 9, and NOAA 10). This data set is archived on the last Processed Archive Tape (PAT) optical disk of the month.

Data set name - SCANNER EARTH RADIATION(S-9) EXITANCE
AND ALBEDO DATA ON OPTICAL DISK

NSSDC ID 84-123A-05G, SCAN EARTH(S9)RAD EXITANCE+ALBEDO

Time period covered - 04/01/85 TO 10/31/86

Quantity of data - 5 DISKS

This set of earth radiation budget data was supplied by the ERBE science team as tape images on 12-in. optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains daily, monthly hourly, and monthly averages of longwave and shortwave radiant exitance at the top of the atmosphere and albedo. The parameters are derived from the scanner measurements and are spatially averaged for 2.5-deg regions. There is also statistical information and scene information, i.e., cloud condition. Similar parameters are determined for those scanner measurements that were identified as viewing clear sky areas. One month of data from the NOAA 9 spacecraft or from combined spacecraft (ERBS, NOAA 9, and NOAA 10) are contained on 1-17 tapes. This data set is archived on the last Processed Archive Tape (PAT) optical disk of the month.

Data set name - NON-SCANNER EARTH RADIANCE (S-10)
EXITANCE AND ALBEDO DATA ON OPTICAL DISK

NSSDC ID 84-123A-05H, N S EARTH(S10)RAD EXITANCE+ALBEDO

Time period covered - 04/01/85 TO 10/31/86

Quantity of data - 5 DISKS

This set of earth radiation budget data was supplied by the ERBE science team as tape images on 12-in. optical disks that were created on Optimum drives in an Aquidneck system. The data were first generated on a CDC computer as scaled integers in IBM representation and put on unlabeled magnetic tapes. This data set contains daily, monthly hourly, and monthly averages of longwave and shortwave radiant exitance at the top of the atmosphere and albedo. The parameters are derived from the nonscanner measurements by the shape factor (SF) technique and the numerical filter technique (NF). The SF data are collected into 10-deg regions and the NF data are

collected into 5-deg regions. Similar to the scanner data set (S-9; NSSDC ID 84-108B-010), there is also statistical and scene information, i.e., cloud condition. However, there are no parameters calculated for clear sky areas. One month of data from the NOAA 9 spacecraft or from combined spacecraft (ERBS, NOAA 9, and NOAA 10) are contained on four tapes. This data set is archived on the last Processed Archive Tape (PAT) optical disk of the month.

***** SAGE *****

SAGE, MCCORMICK
STRATOSPHERIC AEROSOL AND GAS EXPERIMENT
(SAGE)

Data set name - METEOROLOGICAL, EPHEMERIS AND RAW DATA
ARCHIVAL MAGNETIC TAPES

NSSDC ID 79-013A-01A, MET,EPHEM,RAW ARCH TAPE (MERDAT)

Time period covered - 02/21/79 TO 11/18/81

Quantity of data - 233 REELS OF TAPE

These experimenter-supplied, meteorological, ephemeris, reduced data are on 9-track, 1600-bpi, binary magnetic tapes created on a CDC 6600 computer. Each event is composed of one record (616 CDC 60-bit words) of meteorological and ephemeris data (combined) plus 10 or more consecutive 4-s telemetry data records. The meteorological data, which are provided by NOAA, include temperature and density at 19 pressure levels. The ephemeris data include the position and velocity vectors and the time at the ephemeris points. The telemetry data include raw solar radiance data (in counts) that were measured at four wavelengths between 0.385 and 1 micrometer for each spacecraft sunrise and sunset event. Each tape contains 4 days of data.

Data set name - OZONE, AEROSOL AND NITROGEN DIOXIDE
PROFILE DATA ON MAGNETIC TAPE

NSSDC ID 79-013A-01C, OZONE, AEROSOL & NO2 PFL TAPE

Time period covered - 02/21/79 TO 11/18/81

Quantity of data - 2 REELS OF TAPE

This data set contains aerosol extinction profiles and mixing ratios of ozone and nitrogen dioxide. The data set was derived from radiances measured at a 0.385-1.04 micrometer wavelength for each sunrise and sunset event on the Meteorological, Ephemeris, Raw Data Archival Tape (MERDAT; NSSDC ID 79-013A-01A). Profiles of aerosol coefficients of extinction and profiles of nitrogen dioxide and ozone number density are given at 1-km resolution above an earth tangent point from cloud top (>10 km) to 40 km. Spatial coverage is from 79 deg N. to 79 deg S., with a horizontal resolution of 200 km. There are also total extinction ratios and mixing ratios of nitrogen dioxide and ozone. The estimated errors of these derived products at their peak distributions are: 10% for aerosols, 10% for ozone, and 25% for nitrogen dioxide. Originally supplied by the experimenter as one 1600-bpi tape per month in CDC binary, the data set was compressed by NSSDC into two 6250-bpi tapes.

***** SKYLAB *****

SKYLAB, DEMEL
MULTISPECTRAL PHOTOGRAPHIC FACILITY

Data set name - SKYLAB EARTH RESOURCES DATA CATALOG ON
MICROFICHE

NSSDC ID 73-027A-17A, INDEX OF EREP PHOTOGRAPHS, MFICHE

Time period covered - 05/14/73 TO 11/01/74

Quantity of data - 1 CARD OF B/W MICROFICHE

This data set consists of 173 pages of tabulated indexing and six maps that identify photography available from this experiment. Introductory material provides experiment descriptions for all six EREP experiments, examples, and suggestions for usage, along with other useful background information. For each picture the indexing data list time, location, picture identification (roll and frame number), and short descriptive location comments. This document may be obtained from the U.S. Government Printing Office, stock no. 3300-00586, no author, title "Skylab Earth Resources Data Catalog," or from the National Technical Information Service,

Springfield, Virginia 26161-2171, reference no. N75-20798

***** SMS 1 *****

SMS 1, NESDIS STAFF
VISIBLE INFRARED SPIN-SCAN RADIOMETER
(VISSR)

Data set name - EXPERIMENTER HISTORY TAPES - VISSR DATA
IN DIGITAL FORMAT ON MAGNETIC TAPE

NSSDC ID 74-033A-01A, EHT - VISSR DIGITAL DATA TAPES

Time period covered - 05/17/74 TO 10/20/75

Quantity of data - 303 REELS OF TAPE

This set of radiances was prepared by the experimenter's office and is available on 9-track, 1600-bpi, binary magnetic tapes known as the Experimenter History Tapes (EHT). It contains, in image sections, radiances that were measured at visible (0.55 to 0.70 micrometer) and IR (10.5 to 12.6 micrometer) wavelengths with spatial resolutions of 0.9 and 8 km, respectively. There is also time and location, orbit, attitude, and telemetry information. The EHT format is presented in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

Data set name - VISSR VISIBLE IMAGERY ON 70MM FILM

NSSDC ID 74-033A-01B, VISSR VISIBLE IMAGERY, 70MM FILM

Time period covered - 08/30/74 TO 04/19/79

Quantity of data - 1449 B/W NEGATIVE FRAMES

This set of visible imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, and 3) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - VISSR INFRARED IMAGERY ON 70MM FILM

NSSDC ID 74-033A-01C, VISSR IR IMAGERY, 70MM FILM

Time period covered - 08/29/74 TO 04/19/79

Quantity of data - 2825 B/W NEGATIVE FRAMES

This set of IR imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, 3) full-earth or sector imagery, 4) 1/4-size imagery, and 5) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - AOIPS IR AND VISIBLE IMAGE DATA ON TAPE

NSSDC ID 74-033A-01D, AOIPS IR + VISIBLE IMAGE TAPES

Time period covered - 05/17/74 TO 09/26/75

Quantity of data - 5472 REELS OF TAPE

This set of radiance temperatures was prepared by the experimenter's office and is available on 9-track, 1600-bpi, binary magnetic tapes in the Atmospheric and Oceanographic Image Processing System (AOIPS) format. Each tape contains up

to four data files: a visible (0.55- to 0.70-micrometer) image data file, an IR (10.5- to 12.6-micrometer) image data file, an IR grid data file, and a calibration data file. Both the visible and infrared data cover from pole to pole, from 65 deg W. to 155 deg E. The resolutions are 0.9 km and 8 km, respectively. The AOIPS format is described in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

Data set name - IDAMS VISIBLE AND IR IMAGE DATA ON TAPE

NSSDC ID 74-033A-01E, IDAMS VISIBLE + IR IMAGE DATA

Time period covered - 05/17/74 TO 09/06/74

Quantity of data - 786 REELS OF TAPE

This set of radiance temperatures was prepared by the experimenter's office and is available on 7-track, 800-bpi, binary magnetic tapes in the Image Display and Manipulation System (IDAMS) format. Each tape contains up to 4000 image records in brightness temperatures and has orbit/telemetry information also. The tapes were used to generate 70-mm film products but were subsequently replaced by the Atmospheric and Oceanographic Image Processing System (AOIPS) format data. More description of these data may be found in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

***** SMS 2 *****

SMS 2, NESDIS STAFF
VISIBLE INFRARED SPIN-SCAN RADIOMETER
(VISSR)

Data set name - EXPERIMENTER HISTORY TAPES - VISSR DATA
IN DIGITAL FORMAT ON MAGNETIC TAPE

NSSDC ID 75-011A-04A, EHT - VISSR DIGITAL DATA TAPES

Time period covered - 02/17/75 TO 08/28/75

Quantity of data - 334 REELS OF TAPE

This set of radiances was prepared by the experimenter's office and is available on 9-track, 1600-bpi, binary magnetic tapes known as the Experimenter History Tapes (EHT). It contains, in image sections, radiances that were measured at visible (0.55- to 0.70-micrometer) and IR (10.5- to 12.6-micrometer) wavelengths with spatial resolutions of 0.9 and 8 km, respectively. There are also time and location, orbit, attitude, and telemetry information. The EHT format is presented in appendix C of the "Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

Data set name - VISSR VISIBLE IMAGERY ON 70MM FILM

NSSDC ID 75-011A-04B, VISSR VISIBLE IMAGERY, 70MM FILM

Time period covered - 04/19/79 TO 02/01/80

Quantity of data - 1882 B/W NEGATIVE FRAMES

This set of visible imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, and 3) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - VISSR INFRARED IMAGERY ON 70MM FILM

NSSDC ID 75-011A-04C, VISSR IR IMAGERY, 70MM FILM

Time period covered - 04/19/79 TO 09/12/79

Quantity of data - 1446 B/W NEGATIVE FRAMES

This set of IR imagery was produced on commercial image-generation equipment from digital tapes and is available on 70-mm film. Each picture contains a title on the top boundary and a 33-level gray scale on the right boundary that represents brightness temperatures. It may have a combination of the following options: 1) contrast enhancement, 2) image sectorization, 3) full-earth or sector imagery, 4) 1/4-size imagery, and 5) 1/16-size imagery. The maximum effective size covers 500 sq km, represented by 4000 by 3904 pixels. Each element has a maximum resolution of 3.7 km. The title contains the satellite identification, picture number, picture type, coordinate numbers of the top left pixel relative to the visible sensor, start time of sectorized image, and pixel scaling and sector size identification. Sectorized images may be requested by date, time, and geographic area.

Data set name - ADIPS IR AND VISIBLE IMAGE DATA ON TAPE

NSSDC ID 75-011A-04D, ADIPS IR + VISIBLE IMAGE TAPES

Time period covered - 08/12/74 TO 09/12/79

Quantity of data - 4278 REELS OF TAPE

This set of radiance temperatures was prepared by the experimenter's office and is available on 9-track, 1600-bpi, binary magnetic tapes in the Atmospheric and Oceanographic Image Processing System (ADIPS) format. Each tape contains up to four data files: a visible (0.55- to 0.70-micrometer) image data file, an IR (10.5- to 12.6-micrometer) image data file, an IR grid data file, and a calibration data file. Both the visible and infrared data cover from pole to pole, from 65 deg W. to 155 deg E. The resolutions are 0.9 km and 8 km, respectively. The ADIPS format is described in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

Data set name - IDAMS VISIBLE AND IR IMAGE DATA ON TAPE

NSSDC ID 75-011A-04E, IDAMS VISIBLE + IR IMAGE DATA

Time period covered - 02/06/75 TO 10/27/75

Quantity of data - 1780 REELS OF TAPE

This set of radiance temperatures was prepared by the experimenter's office and is available on 7-track, 800-bpi, binary magnetic tapes in the Image Display and Manipulation System (IDAMS) format. Each tape contains up to 4000 image records in brightness temperatures and has orbit/telemetry information also. The tapes were used to generate 70-mm film products but were subsequently replaced by the Atmospheric and Oceanographic Image Processing System (ADIPS) format data. More description of these data may be found in appendix B of the "VISSR Data Processing Plan for Synchronous Meteorological and Geostationary Operational Environmental Satellites (SMS/GOES)" by P.L. McKowan, TRF B29538.

STS 2/OSTA-1, ELACHI
SHUTTLE IMAGING RADAR-A (SIR-A)

Data set name - RADAR IMAGERY

NSSDC ID 81-111A-01A, RADAR IMAGERY

Time period covered - 11/12/81 TO 11/14/81

Quantity of data - 1530 FEET OF B/W NEGATIVES

This data set contains radar images of the earth on 5-in. film. The images were acquired at 1.28 GHz frequency (23 cm wavelength) and were recorded on signal film. The signal film, which can be regarded as a radar hologram, was processed in an optical correlator at JPL. The resulting imagery has a scale of 1:500,000, and the ground tracks cover selected areas between 35 deg S. and 40 deg N. The width of all swaths is 50 km, but the length of the image varies depending on the on/off times. Each image is identified by a data-take number. The resolution is slightly better than 40 m. Since the image film does not contain annotation data, the "Shuttle Imaging Radar-A (SIR-A) Experiment" (TRF B34186-000A) must be used to obtain

the geographic locations.

Data set name - MOVIE IN COLOR

NSSDC ID 81-111A-01B, SIR-A MOVIE, COLOR

Time period covered - (N/A)

Quantity of data - 300 FEET OF COLOR NEGATIVES

This 11-min motion picture ("The SIR-A Movie") begins with footage of the actual launch of the spacecraft and continues with examples of the radar imagery acquired with the Shuttle Imaging Radar-A flown on STS-2. The narration is done by the principal investigator, Dr. Charles Elachi of JPL. The film is made in such a way that the imagery appears as though the viewer is flying on the Shuttle. Imagery examples include the coast of southern California, villages and tectonic features in China, river patterns in Borneo, and buried drainage patterns in the Egyptian/Sudanese desert.

Data set name - SIR-A MOVIE FILM ON VIDEO TAPE

NSSDC ID 81-111A-01C, SIR-A MOVIE ON VIDEO TAPE

Time period covered - (N/A)

Quantity of data - 1 REEL OF TAPE

This video cassette ("The SIR-A Movie") begins with footage of the actual launch of the spacecraft and continues with examples of the radar imagery acquired with the Shuttle Imaging Radar-A flown on STS-2. The narration is done by the principal investigator, Dr. Charles Elachi, of JPL. The film is made in such a way that the imagery appears as though the viewer is flying on the Shuttle. Imagery examples include the coast of southern California, villages and tectonic features in China, river patterns in Borneo, and buried drainage patterns in the Egyptian/Sudanese desert.

STS 2/OSTA-1, GOETZ
SHUTTLE MULTISPECTRAL INFRARED
RADIOMETER (SMIRR)

Data set name - CALIBRATED RADIOMETRIC DATA ON MAGNETIC TAPE

NSSDC ID 81-111A-02A, RADIOMETRIC CALIBRATION DATA

Time period covered - 06/09/81 TO 03/01/82

Quantity of data - 1 REEL OF TAPE

This set of calibration data is on one 9-track, 1600-bpi magnetic tape that was generated by an IBM 360 computer in binary format. Two calibrations were performed before launch and three after launch. Limited documentation was provided by the principal investigator. This data set is sent automatically when the radiometric measurements (NSSDC ID 81-111A-02B) are ordered.

Data set name - UNCALIBRATED RADIOMETER DATA ON MAGNETIC TAPE

NSSDC ID 81-111A-02B, UNCALIBRATED RADIOMETER DATA

Time period covered - 11/12/81 TO 11/14/81

Quantity of data - 5 REELS OF TAPE

This set of uncalibrated radiometric data was archived by the principal investigator on 9-track, 1600-bpi, binary magnetic tapes that were generated on an IBM 360 computer. The data set contains radiometric reflectance of selected portions of the earth's surface that were measured in 10 wavelengths (0.5-2.5 micrometers). Approximately 70 min of cloud-free data, equivalent to 400,000 spectra, and 50 min of nearly cloud-free data are available on a total of 17 data tapes. The radiometric calibration data tape (NSSDC ID 81-111A-02A) and the photographs (81-111A-02C or 81-111A-02D) are necessary for calibration and location of the radiances. Limited documentation was provided by the P.I.

Data set name - BLACK AND WHITE IMAGERY

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NSSDC ID 81-111A-02C, BLACK AND WHITE IMAGERY

Time period covered - 11/12/81 TO 11/14/81

Quantity of data - 250 FEET OF B/W NEGATIVES

This set of black and white photographs is on 16-mm, 250-ft film. The data provide accompanying images to the digital radiometric measurements (NSSDC ID 81-111A-02B). Approximately 120 min of images were collected, but, unlike the radiometer data, no separate data takes are available. Since these photographs are necessary to geographically locate radiometric measurements, they are sent automatically when the radiometric measurements (NSSDC ID 81-111A-02B) are ordered.

Data set name - COLOR IMAGERY

NSSDC ID 81-111A-02D, COLOR IMAGERY

Time period covered - 11/12/81 TO 11/14/81

Quantity of data - 250 FEET OF COLOR NEGATIVES

This set of color photographs is on 16-mm, 250-ft film. The data provide accompanying images to the digital radiometric measurements (NSSDC ID 81-111A-02B). Approximately 120 min of images were collected, but, unlike the radiometer data, no separate data takes are available. The quality of this set is poorer than the black and white images (NSSDC ID 81-111A-02C). The frame numbers, for example, are almost illegible. Therefore, the black and white film is recommended as the necessary data set to geographically locate the radiometric measurements.

STS 2/05TA-1, KIM
OCEAN COLOR EXPERIMENT (OCE)

Data set name - CALIBRATED RADIANCE DATA ON MAGNETIC TAPE

NSSDC ID 81-111A-05A, CALIBRATED RADIANCE DATA

Time period covered - 11/14/81 TO 11/14/81

Quantity of data - 2 REELS OF TAPE

This data set contains calibrated and located radiances on two 9-track, 1600-bpi, binary magnetic tapes. The radiances were measured at eight wavelengths between 0.49 and 0.79 micrometer and were corrected for solar zenith angle, surface albedo, Rayleigh scattering, and aerosol scattering. Approximately 120 min of scanning data were acquired over the Mediterranean and the Yellow Seas, with a swath width of 506 km and a resolution of 1-3 km. From this data set, digital and photographic images of chlorophyll concentrations and concentration gradients have been produced and may be available through the investigator.

STS 2/05TA-1, REICHEL, JR.
MEASUREMENT OF AIR POLLUTION FROM
SATELLITES (MAPS)

Data set name - MIDDLE AND UPPER TROPOSPHERIC CARBON
MONOXIDE MIXING RATIOS DATA ON TAPE

NSSDC ID 81-111A-04A, TROPOSPHERIC CO MIXING RATIO TAPE

Time period covered - 11/14/81 TO 11/14/81

Quantity of data - 2 REELS OF TAPE

This set of carbon monoxide values was archived by the principal investigator on 9-track, 1600-bpi magnetic tapes that were created on an IBM 360 computer in ASCII format. The data set contains carbon monoxide mixing ratios that were inferred from radiances measured at 2080-2220 cm⁻¹. The column values cover an altitude range of 3-12 km and, horizontally, between 38 deg N and 38 deg S over all longitudes, with a precision of about 10%. The data agree to within 20-30% of near simultaneous aircraft measurements made over Australia.

***** STS-41G *****

STS-41G, ELACHI
SHUTTLE IMAGING RADAR-B (SIR-B)

Data set name - RADAR IMAGERY ON FILM

NSSDC ID 84-108A-01A, RADAR IMAGERY ON FILM

Time period covered - 10/07/84 TO 10/13/84

Quantity of data - 298 B/W NEGATIVE FRAMES

This data set contains radar images of the earth on 8- x 10-in black and white transparencies. The optically recorded images were acquired at 1.28 GHz frequency (23 cm wavelength) and at varying incidence angles from 15 to 60 deg. The resulting imagery has a scale of 1:500,000. Its resolution is 25 m along track and 15-58 m across track, and it has a swath width of 20-40 km. Besides the imagery, the film products also contain scene annotation, the JPL logo, a gray scale, and a kilometer scale. Limited coverage of all continents except Antarctica is available. For more detail, refer to the maps in "The Shuttle Imaging Radar B (SIR-B) Experiment Report," JPL 88-2.

Data set name - IMAGE AND ANNOTATION DATA ON MAGNETIC
TAPE

NSSDC ID 84-108A-01B, IMAGE DATA & ANNOTATION ON TAPE

Time period covered - 10/07/84 TO 10/12/84

Quantity of data - 162 REELS OF TAPE

This data set contains radar images of the earth on 9-track, 1600-bpi magnetic tapes. The digitally correlated images were acquired at 1.28 GHz frequency (23 cm wavelength) and at varying incidence angles from 15 to 60 deg. The resulting imagery has a scale of 1:500,000. Its resolution is 25 m along track and 15-58 m across track, and it has a swath width of 20-40 km. In addition to image data, annotation is also included on a tape. Limited coverage of all continents except Antarctica is available. For more detail, refer to the maps in "The Shuttle Imaging Radar B (SIR-B) Experiment Report," JPL 88-2.

STS-41G, MOLLBERG
LARGE FORMAT CAMERA (LFC)

Data set name - IMAGERY ON FILM

NSSDC ID 84-108A-02A, IMAGERY ON FILM

Time period covered - 10/05/84 TO 10/13/84

Quantity of data - 5000 FEET OF B/W NEGATIVES

This data set contains photographs of the earth on 9- x 18-in black and white film. Approximately 2100 frames were acquired during daylight passes from altitudes of more than 200 km. The resulting scales of the images range from near 1:750,000 to about 1:1,200,000. Ground coverage is limited by excessive cloud cover, especially in the Northern Hemisphere. High quality images of areas of all continents except Antarctica, however, are available. In compliance with the Land Remote Sensing Commercialization Act of 1984, only federally funded and cooperative researchers may order these data from NSSDC.

Data set name - COLOR IMAGERY ON FILM

NSSDC ID 84-108A-02B, COLOR IMAGERY ON FILM

Time period covered - 10/08/84 TO 10/11/84

Quantity of data - 2000 FEET OF COLOR POSITIVES

This data set contains photographs of the earth on 9- x 18-in. color film. Approximately 1500 frames were acquired during daylight passes from altitudes of more than 200 km. The resulting scales of the images range from near 1:750,000 to about 1:1,200,000. Ground coverage is limited by excessive cloud cover, especially in the Northern Hemisphere. High quality images of areas of all continents except Antarctica, however, are available. In compliance with the Land Remote Sensing Commercialization Act of 1984, only federally funded and cooperative researchers may order these data from NSSDC.

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 ***** STS-51B/SPACELAB 3 *****

STS-51B/SPACELAB 3, FARMER
 ATMOSPHERIC TRACE MOLECULES OBSERVED BY
 SPECTROSCOPY (ATMDS)

Data set name - ATMOSPHERIC TRACE AND MINOR GASES VOLUME
 MIXING RATIO PROFILES ON FLOPPY DISK

NSSDC ID 85-034A-14A, TRACE+MINR GAS MIX RATIO PROFILES

Time period covered - 04/01/85 TO 05/31/85

Quantity of data - 1 DISK

This set of trace and minor gas volume mixing ratio (VMR) profiles was supplied by the experimenter on one 5 1/4-inch floppy disk in IBM-compatible, ASCII format. The data were acquired during the Shuttle flight of Spacelab 3 in April-May 1985. Profiles for more than 25 atmospheric species, including CO and halogenated hydrocarbons, were retrieved from high-resolution (0.01 cm-1 unapodized), IR (2-16 micrometer), solar occultation spectra. They cover both the Northern Hemisphere (at about 30 deg N.) and the Southern Hemisphere (at about 47 deg S.) at altitudes that range from 10 to 150 km, with an average resolution of 4.1 km. For most of the species, separate profiles for sunrises (.SR) and sunsets (.SS) are listed. Besides the data files, there is also an occultation file that lists all occultations by longitude and latitude in chronological order, a physical model file that tabulates models that are derived from the spectra and are used in establishing the VMR profiles, and an information file that documents the contents of the disk.

 ***** TIROS 2 *****

TIROS 2, BARKSDALE
 SCANNING RADIOMETER

Data set name - FINAL METEOROLOGICAL RADIATION TAPES
 (FMRT)

NSSDC ID 60-016A-02A, FINAL MET. RADIATION TAPES

Time period covered - 11/23/60 TO 04/26/61

Quantity of data - 126 REELS OF TAPE

The TIROS 2 Final Meteorological Radiation Tapes (FMRT) were produced on an IBM 7094 computer. They contain calibrated radiances measured in five wavebands between 0.2 and 30 micrometers. They also include attitude/orbit data, geographic locations associated with the radiation measurements, solar ephemeris, and satellite temperature. These 7-track, 200-bpi binary tapes contain the original reduced data in their entirety. Each tape contains approximately 1 day, i.e., eight orbits of data. The exact format of the tapes is described in the "TIROS II Radiation Data Users' Manual" and its supplement (B00820).

Data set name - CATALOG OF METEOROLOGICAL RADIATION DATA
 (MICROFICHE)

NSSDC ID 60-016A-02B, CAT OF METRO RADIATION DATA, FICHE

Time period covered - 11/23/60 TO 04/13/61

Quantity of data - 7 CARDS OF B/W MICROFICHE

The "TIROS II Radiation Data Catalog" (August 15, 1961; B03687) describes the mapping procedures that were employed in processing the TIROS 2 scanning radiometer Final Meteorological Radiation Tapes (FMRT) using automatic data processing equipment. Sample grid point maps of the first 50 orbits, where data were acquired over or near the United States, are presented. An index of all existing FMRT for TIROS 2 is also included. The index is divided into two sections. One section contains information concerning the attitude of the satellite and the location of the subpoint track as a function of time. The second section gives the time for which radiation data are available on the FMRT. The index coverage is from November 23,

1960, to April 13, 1961. This data catalog was published by staff members of the Aeronomy and Meteorology Division of NASA/CSFC and the Meteorology Satellite Laboratory of the U.S. Weather Bureau. It should be used in conjunction with the "TIROS II Radiation Data Users' Manual," published in August 1961 by the same group (B00820). This document includes an explanation of the calibration, physical significance of the data, approximations used, FMRT format, and associated information.

 ***** TIROS 3 *****

TIROS 3, RADDS
 SCANNING RADIOMETER

Data set name - FINAL METEOROLOGICAL RADIATION TAPES
 (FMRT)

NSSDC ID 61-017A-03A, FINAL MET. RADIATION TAPES

Time period covered - 07/12/61 TO 10/01/61

Quantity of data - 74 REELS OF TAPE

The TIROS 3 Final Meteorological Radiation Tapes (FMRT) were produced on an IBM 7094 computer. They contain calibrated radiances measured in five wavebands between 0.2 and 30 micrometers. They also include attitude/orbit data, geographic locations associated with the radiation measurements, solar ephemeris, and satellite temperature. These 7-track, 200-bpi binary tapes contain the original reduced data in their entirety. Each tape contains approximately 1 day, i.e., eight orbits of data. The exact format of the tapes is described in the "TIROS III Radiation Data Users' Manual" and its supplement (B19565).

Data set name - CATALOG OF METEOROLOGICAL RADIATION DATA
 (MICROFICHE)

NSSDC ID 61-017A-03B, CAT OF METRO RADIATION DATA, FICHE

Time period covered - 07/12/61 TO 09/30/61

Quantity of data - 8 CARDS OF B/W MICROFICHE

The "TIROS III Radiation Data Catalog" (B03688) describes the mapping procedures that were employed in processing the TIROS 3 scanning radiometer Final Meteorological Radiation Tapes (FMRT) using automatic data processing equipment. Radiation grid-print maps are presented for five case studies. An index of all existing FMRT for TIROS 3 is also included. The index is divided into two sections. One section contains information concerning the attitude of the satellite and the location of the subpoint track as a function of time. The second section gives the time for which radiation data are available on the FMRT. The index coverage is from July 12 to September 30, 1961. This data catalog was published in December 1962 by staff members of the Aeronomy and Meteorology Division of NASA/CSFC and the Meteorology Satellite Laboratory of the U.S. Weather Bureau. It should be used in conjunction with the "TIROS III Radiation Data Users' Manual" and its supplement (B19565), published in August 1962 and December 1963, respectively, by the same group. This document includes an explanation of the calibration, physical significance of the data, approximations used, FMRT format, and associated information.

TIROS 3, SUOMI
 LOW-RESOLUTION OMNIDIRECTIONAL
 RADIOMETER

Data set name - LOW-RESOLUTION OMNIDIRECTIONAL
 RADIOMETER TEMPERATURE TAPES

NSSDC ID 61-017A-01A, OMNIDIRECTIONAL RADIOMETER TAPES

Time period covered - 07/12/61 TO 10/20/61

Quantity of data - 5 REELS OF TAPE

The TIROS 3 low-resolution omnidirectional radiometer data are available on magnetic tapes produced on an IBM 7094 computer. These 7-track, 556-bpi, BCD tapes contain the black and white sensor temperature values obtained from the hemispheric bolometers. Each temperature value is located with respect to time, latitude, and longitude. The data were not processed on a routine basis.

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***** TIROS 4 *****

Data set name - ATTITUDE SUMMARY TABLES

NSSDC ID 62-002A-00D, TIROS 4 ATTITUDE SUMMARY

Time period covered - 02/08/62 TO 06/12/62

Quantity of data - 4 CARDS OF B/W MICROFICHE

This data set contains analyzed spacecraft attitude data prepared by Aracon Laboratories on contract to the project office. The spacecraft attitude was determined primarily from the horizon sensors and sun sensors, and is listed once per orbit in two forms. One form is in an orbital coordinate system where minimum nadir angle in degree is shown, along with time of the minimum nadir angle occurrence. The time is in minutes after the preceding ascending node passage. The other form shows right ascension and declination of the spin axis at the ascending node of each orbit. This is the standard format, compiled from the first form, in celestial coordinates. Other data listed for each orbit are UT date, spacecraft day and orbit number, longitude, UT time of ascending node crossing, and spin axis/satellite-sun angle. Time plots of both forms of attitude data are also included. Changes in magnetic attitude control (MAC) mode are indicated on the plots. These data are published in Goldshlak's "TIROS 4 Attitude Summary," B16525.

TIROS 4, BARKSDALE
SCANNING RADIOMETER

Data set name - FINAL METEOROLOGICAL RADIATION TAPES
(FMRT)

NSSDC ID 62-002A-03A, FINAL MET. RADIATION TAPES

Time period covered - 02/08/62 TO 06/30/62

Quantity of data - 132 REELS OF TAPE

The TIROS 4 Final Meteorological Radiation Tapes (FMRT) were produced on an IBM 7094 computer. They contain calibrated radiances and attitude/orbit data. They also include geographic locations associated with the radiation measurements, solar ephemeris, and satellite temperature. These 7-track, 200-bpi, binary tapes contain the original reduced data in their entirety. Each tape contains approximately 1 day, i.e., eight orbits of data. The exact format of the tapes is described in the "TIROS IV Radiation Data Catalog and Users' Manual," data set 62-002A-03B (B00840).

Data set name - RADIATION DATA CATALOG AND USERS' MANUAL
(MICROFICHE)

NSSDC ID 62-002A-03B, RAD DATA CATALOG + USERS MAN, FICH

Time period covered - 02/08/62 TO 06/30/62

Quantity of data - 5 CARDS OF B/W MICROFICHE

The "TIROS IV Radiation Data Catalog and Users' Manual" (B00840) fully describes the TIROS 4 meteorological satellite scanning radiometer and its calibration, data processing, Final Meteorological Radiation Tapes (FMRT), observed degradation patterns, and possible corrections for degradation. The catalog/manual also includes, in two forms, documentation of each orbit of successfully reduced radiation data acquired by TIROS 4. Appendix A is an index of the FMRT. This index is divided into two sections. One section contains information concerning the attitude of the satellite and the location of the subpoint track as a function of time. The second section of the index gives the time for which radiation data are available on the FMRT. Appendix B is a subpoint track summary of available radiation data in diagrammatic form.

TIROS 4, SUOMI
LOW-RESOLUTION OMNIDIRECTIONAL
RADIOMETER

Data set name - LOW-RESOLUTION OMNIDIRECTIONAL
RADIOMETER TEMPERATURE TAPES

NSSDC ID 62-002A-01A, OMNIDIRECTIONAL RADIOMETER TAPES

Time period covered - 02/08/62 TO 06/28/62

Quantity of data - 10 REELS OF TAPE

The TIROS 4 low-resolution omnidirectional radiometer data are available on magnetic tapes produced on an IBM 7094

computer. These 7-track, 556-bpi, BCD tapes contain the black and white sensor temperature values obtained from the hemispheric bolometers. Each temperature value is located with respect to time, latitude, and longitude. The data were not processed on a routine basis.

Data set name - OMNIDIRECTIONAL RADIOMETER RADIANCE
VALUE TAPES

NSSDC ID 62-002A-01B, RADIANCE VALUE TAPES

Time period covered - 02/08/62 TO 06/10/62

Quantity of data - 2 REELS OF TAPE

These TIROS 4 radiation tapes were generated on an IBM 7094 computer from the low-resolution omnidirectional radiometer temperature values. The 7-track tapes were written in BCD format at 556 bpi. The temperature values were converted to longwave radiation values in Langleys per minute. Albedos expressed as percentages were determined. These values are given, along with coordinates of the subsatellite point, time, and zenith angle of the sun with respect to the satellite. Additional information about the sensors, data, and data manipulation are given in a 1965 doctoral thesis by Frederick B. House, from the University of Wisconsin, titled "The Radiation Balance of the Earth from a Satellite," B01306.

***** TIROS 7 *****

Data set name - TIROS VII ATTITUDE SUMMARY

NSSDC ID 63-024A-00D, TIROS VII ATTITUDE SUMMARY

Time period covered - 06/19/63 TO 08/28/65

Quantity of data - 10 CARDS OF B/W MICROFICHE

These are analyzed spacecraft attitude data prepared by Aracon Laboratories on contract to the project office. Attitude was determined primarily from the horizon sensors and sun sensors, and is listed once per orbit in two forms. One form is in an orbital coordinate system where minimum nadir angle in degree is shown, along with time of minimum nadir angle occurrence. This time is in minutes after preceding ascending node passage. The other form (columns G and H) shows right ascension and declination of the spin axis at the ascending node of each orbit. This is the standard form for attitude data (compiled from the first form) in celestial coordinates. Other data listed for each orbit are UT date, spacecraft day and orbit number, longitude and UT time of ascending node crossing, and spin-axis/satellite-sun angle. Also included are time plots of both forms of attitude data. Changes in magnetic attitude control (MAC) mode are indicated on the plots. These data are published in Goldshlak's "TIROS 7 Attitude Summary," B16525.

TIROS 7, BARKSDALE
SCANNING RADIOMETER

Data set name - FINAL METEOROLOGICAL RADIATION TAPES
(FMRT)

NSSDC ID 63-024A-02A, FINAL MET. RADIATION TAPES

Time period covered - 06/19/63 TO 06/19/65

Quantity of data - 692 REELS OF TAPE

The TIROS 7 Final Meteorological Radiation Tapes (FMRT) were produced on an IBM 7094 computer. They contain calibrated radiances and attitude/orbit data. They also include geographic locations associated with the radiation measurements, solar ephemeris, and satellite temperature. These 7-track, 200-bpi, binary tapes contain the original reduced data in their entirety. Each tape contains approximately 1 day, i.e., eight orbits of data. The exact format of the tapes is described in the "TIROS VII Radiation Data Catalog and Users' Manual," data set 63-024A-02B (B00850).

Data set name - RADIATION DATA CATALOG AND USERS' MANUAL
ON MICROFICHE

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NSSDC ID 63-024A-02B, TIROS 7 RADIATION DATA CAT, FICHE

Time period covered - 06/19/63 TO 06/19/65

Quantity of data - 14 CARDS OF B/W MICROFICHE

The "TIROS VII Radiation Data Catalog and Users' Manual" (B00850) fully describes the TIROS 7 scanning radiometer, calibration, data processing, Final Meteorological Radiation Tape (FMRT) format, and radiometer performance. The catalog/manual also contains, in two forms, documentation of each orbit of successfully reduced radiation data. One method of presentation is the index of the FMRT, and the other is a subpoint track summary of available radiation data in diagrammatic form.

TIROS 7, BRACE
LANGMUIR PROBE

Data set name - TABLE OF ELECTRON DENSITIES ON MICROFILM

NSSDC ID 63-024A-03A, LANGMUIR PROBE DENSITY DATA

Time period covered - 06/19/63 TO 07/09/63

Quantity of data - 1 REEL OF MICROFILM

The analyzed data set, which was received from the experimenter, presents electron density data in tabular form on 35-mm microfilm. Other types of information given are time (UT and local), pass number, station, geographic and geomagnetic location, altitude, electron current, volts, magnetic latitude, dip angle, and solar and magnetic indices. There is approximately one data point per minute. A description of the data is contained in a data users' note (NSSDC 67-24), "TIROS 7 (1963 24A) Electrostatic Probe Experiment," B05104.

TIROS 7, SUOMI
LOW-RESOLUTION OMNIDIRECTIONAL
RADIOMETER

Data set name - LOW-RESOLUTION OMNIDIRECTIONAL
RADIOMETER TEMPERATURE TAPES

NSSDC ID 63-024A-01A, OMNIDIRECTIONAL RADIOMETER TAPES

Time period covered - 06/19/63 TO 08/29/63

Quantity of data - 9 REELS OF TAPE

The TIROS 7 low-resolution omnidirectional radiometer data are available on magnetic tapes that were produced on an IBM 7094 computer. These 7-track, 556-bpi, BCD tapes contain the black and white sensor temperature values obtained from the hemispheric bolometers. Each temperature value is located with respect to time, latitude, and longitude. The omnidirectional radiometer data were not processed on a routine basis.

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INDEX OF DATA SETS

SPACECRAFT NAME	LAUNCH DATE	EXPERIMENT NAME	NSSDC ID	DATA SET INFORMATION	
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ASTP-APOLLO	07/15/75	35MM COLOR FILM MAGS.-MISC.EXPS SCIENCE DEMONSTRATIONS-18MM COLOR SPACECRAFT DIGITAL TAPES APOLLO-SOYUZ EPHEMERIS DATA EPHEMERIS DATA ON MAG. TAPE EPHEMERIS DATA ON MICROFILM	75-066A 75-066A-00D 75-066A-00E 75-066A-00F 75-066A-00G 75-066A-00H 75-066A-00I	N/A N/A 07/15/75 07/24/75 N/A 07/15/75 07/24/75 07/16/75 07/24/75	9 9 9 9 9 9 9
BOWYER		ASTP, EUV SURVEY (MA-083) EUV DATA ON MAG TAPE	75-066A-01 75-066A-01A	07/16/75 07/24/75	9
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EL-BAZ		ASTP, EARTH OBS + PHOTOS (MA-136) EARTH OBS + PHOTOS, 35MM COLOR 70MM COLOR FILM	75-066A-21 75-066A-21A 75-066A-21B	N/A N/A	10 10
PEPIN		ASTP, STRATOSPHERIC AEROSOLS (MA-007) SECOND GENERATION POS. 70 MM FILM PHOTOMETER INTENSITIES VS TIME,TP	75-066A-19 75-066A-19A 75-066A-19B	N/A 07/26/75 07/26/75	10 10
VONBUN		ASTP, GEDDYNAMICS (MA-128) GEDDYNAMICS, 35MM COLOR	75-066A-17 75-066A-17A	N/A	10
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BE-B	10/10/64	BE-B, RF BEACON TOTAL ELECTRON CONTENT (MFILM) TOTAL ELECTRON CONTENT (BOOKS) LAT VS TEC PLOTS ON MICROFICHE	64-064A 64-064A-01 64-064A-01A 64-064A-01B 64-064A-01C	10/13/64 04/17/69 10/16/64 12/31/67 10/21/64 03/17/65	11 11 11
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DMSP 5B/F3	11/09/72	DMSP, SCANNING RADIOMETER (SR) AURORAL IMAGERY NIGHTTIME POLAR IMAGERY	72-089A 72-089A-01 72-089A-01A 72-089A-01B	02/01/73 05/31/75 02/01/73 05/31/75	12 12
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DMSP 5D-1/F1	09/11/76	DMSP-5D, OPER LINE SCAN SYS (OLS) AURORAL IMAGERY ON MICROFILM DMSP-5D, MULTICHAN FILT RADMT (MFR) TOTAL OZONE + CALIBRATED RADIANCE MFR TOTAL OZONE GRID POINT DATA	76-091A 76-091A-01 76-091A-01A 76-091A-02 76-091A-02A 76-091A-02B	05/01/77 09/30/79 03/25/77 07/23/77 03/25/77 07/23/77	13 13 13
DMSP 5D-1/F2	06/05/77	DMSP-5D, OPER LINE SCAN SYS (OLS) AURORAL IMAGERY ON MICROFILM DMSP-5D, MULTICHAN FILT RADMT (MFR) TOTAL OZONE + CALIBRATED RADIANCE MFR TOTAL OZONE GRID POINT DATA	77-044A 77-044A-01 77-044A-01A 77-044A-02 77-044A-02A 77-044A-02B	08/01/77 06/05/78 07/13/77 02/16/80 07/13/77 02/16/80	13 13 13
DMSP 5D-1/F3	05/01/78	DMSP-5D, OPER LINE SCAN SYS (OLS) AURORAL IMAGERY ON MICROFILM DMSP-5D, MULTICHAN FILT RADMT (MFR) TOTAL OZONE + CALIBRATED RADIANCE MFR TOTAL OZONE GRID POINT DATA	78-042A 78-042A-01 78-042A-01A 78-042A-02 78-042A-02A 78-042A-02B	05/20/78 09/30/79 07/23/78 02/05/80 07/23/78 02/05/80	14 14 14
DMSP 5D-1/F4	06/06/79	DMSP-5D, OPER LINE SCAN SYS (OLS) AURORAL IMAGERY ON MICROFILM DMSP-5D, MULTICHAN FILT RADMT (MFR) TOTAL OZONE + CALIBRATED RADIANCE MFR TOTAL OZONE GRID POINT DATA	79-050A 79-050A-01 79-050A-01A 79-050A-02 79-050A-02A 79-050A-02B	07/01/79 09/30/79 06/17/79 02/06/80 06/17/79 02/06/80	14 14 14
ECHO 2	01/25/64	ECHO 2, ATMOSPHERIC DRAG DENSITY ATMOS DRAG DENSITY TABLES	64-004A 64-004A-03 64-004A-03A	01/31/64 06/05/69	14
EDLE 1	08/16/71	EDLE 1, UPPER ATMOS WEA RELAY SYS RAW 'STATE' AND LOC. DATA TAPE	71-071A 71-071A-01 71-071A-01A	08/27/71 07/04/72	15
ERBS	10/05/84	ERBS, EARTH RADN BUDGET EXP/ERBE RAW ARCH TP (RAT) IMAGES ON OP DSK PRDC ARCH TP (PAT) IMAGES ON OP DSK TOTAL SOLAR IRRADIANCE SOLAR INCIDENCE (S-2) ON OP DSK GRIDDED EARTH RAD BUDGET OD (S-4) SCAN EARTH(S9)RAD EXITANCE+ALBEDO	84-108B 84-108B-01 84-108B-01B 84-108B-01C 84-108B-01D 84-108B-01E 84-108B-01F 84-108B-01G	10/25/84 07/31/87 11/01/84 01/31/86 03/01/85 10/31/86 11/01/84 11/30/84 11/01/84 11/30/84 11/01/84 11/30/84	15 15 15 15 15 15 16

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	N S EARTH(S10)RAD EXITANCE+ALBEDO		84-1088-01H	11/01/84	11/30/84	16
	ERBS,STRAT AROSOLACAS EXP/SACEII		84-1088-02			
	MET,EPHEM,RAW ARCH TAPE(MERDAT)		84-1088-02A	11/01/84	05/31/89	16
	OZONE NO. DENSITY+MIX RATIO PROFIL		84-1088-02B	10/24/84	11/30/88	16
	SAGE II AEROSOL PROFIL ARCH. TAPE		84-1088-02C	10/05/84	11/30/88	16
GEMINI 5	MEY	08/21/65	65-068A			
	GEMINI 5,ZODIACAL LIGHT PHOTO		65-068A-01			
GEMINI 9	MEY	06/03/66	65-068A-01A	08/21/65	08/29/65	16
	GEMINI 9,ZODIACAL LIGHT PHOTO		66-047A			
	ZODIACAL LIGHT PHOTOGRAPHY		66-047A-01			
GEMINI 10	MEY	07/18/66	66-047A-01A	06/03/66	06/06/66	16
	GEMINI 10,ZODIACAL LIGHT PHOTO		66-066A			
	ZODIACAL LIGHT PHOTOGRAPHY		66-066A-01			
GOES 1	NESDIS STAFF	10/16/75	66-066A-01A	07/18/66	07/21/66	17
	GOES 1,V/IR SPIN-SCAN RAD (VISSR)		75-100A			
	EHT - VISSR DIGITAL DATA TAPES		75-100A-01			
	VISSR VISIBLE IMAGERY,70MM FILM		75-100A-01A	04/16/76	05/29/77	17
	VISSR IR IMAGERY,70MM FILM		75-100A-01B	04/11/76	10/28/76	17
	VISSR IR/VIS ADIPS IMAGE TAPES		75-100A-01C	04/11/76	10/28/76	17
	IDAMS VISIBLE + IR IMAGE DATA,TP		75-100A-01D	07/19/75	06/11/78	17
GOES 2	NESDIS STAFF	06/16/77	75-100A-01E	01/26/76	02/02/76	17
	GOES 2,SPIN-SCAN RADIOMETER-VISSR		77-048A			
	ADIPS IR + VISIBLE IMAGE DATA		77-048A-01			
	VISSR VIS IMAGERY ON 70MM FILM		77-048A-01A	12/07/77	03/05/78	17
	VISSR IR IMAGERY ON 70MM FILM		77-048A-01B	01/03/79	02/03/79	18
GOES 3	NESDIS STAFF	06/16/78	77-048A-01C	01/03/79	01/03/79	18
	GOES 3,SPIN-SCAN RADIOMETER-VISSR		78-062A			
	VISSR IR IMAGERY ON 70MM FILM		78-062A-01			
	VISSR VIS IMAGERY ON 70MM FILM		78-062A-01A	05/02/79	06/05/79	18
	ADIPS IR + VISIBLE IMAGE DATA		78-062A-01B	05/20/79	06/08/79	18
HCMM	BARNES	04/26/78	78-062A-01C	06/11/78	05/02/79	18
	HCMM,RADIOMETER (HCMR)		78-041A			
	RADIOMETER DATA ON FILM		78-041A-01			
	IMAGE DATA ON MAG TAPE		78-041A-01A	06/06/78	09/07/80	18
	DAY/NIGHT REGISTERED DATA ON FILM		78-041A-01B	05/11/78	12/06/79	18
	DAY/NIGHT REGISTERED DATA		78-041A-01C	07/11/78	09/16/79	19
LOGACS 1, AGENA BRUCE		05/22/67	78-041A-01D	05/11/78	06/17/79	19
	LOGACS 1, ATMOSPHERIC DENSITY SYS		67-050B			
	PLOTS, 140-240 KM, MAY 67, FICHE		67-050B-01			
	ACCELEROMETER PLOTS, MAY 67,FICHE		67-050B-01A	05/23/67	05/26/67	19
CHIU			67-050B-01B	05/23/67	05/26/67	19
	LOGACS 1, WIND ANALYSIS		67-050B-02			
NIMBUS 1	FOSHEE	08/28/64	67-050B-02A	05/25/67	05/27/67	19
	WIND COMP BELOW 200 KM,MICROFICHE		64-052A			
	NIMBUS 1,HRIR		64-052A-03			
	NIMBUS HRIR MET. RADIATION TAPES		64-052A-03A	08/29/64	09/22/64	19
	HRIR PHOTOFACSIMILE FILM STRIPS		64-052A-03B	08/28/64	09/22/64	19
	HRIR FILM STRIP CAT ON MICROFICHE		64-052A-03C	08/28/64	09/22/64	19
	HRIR RAD. TAPE CAT ON MICROFICHE		64-052A-03D	08/28/64	09/22/64	20
NIMBUS 2	FOSHEE	05/15/66	66-040A			
	DATA CATALOG OF EXPERMNT OPERATNS		66-040A-00D	05/15/66	07/28/66	20
	NIMBUS 2,HRIR		66-040A-03			
	NIMBUS HRIR MET. RADIATION TAPES		66-040A-03A	05/15/66	11/15/66	20
	HRIR PHOTOFACSIMILE FILM STRIPS		66-040A-03B	05/15/66	11/15/66	20
	HRIR WORLD MONTAGE CATALOG		66-040A-03D	05/20/66	11/15/66	20
MCCULLOCH			66-040A-04			
	NIMBUS 2,HRIR		66-040A-04A	05/15/66	07/28/66	20
	NIMBUS HRIR MET. RADIATION TAPES		66-040A-04B	05/15/66	07/28/66	20
	HRIR PHOTO DISPLAY		66-040A-04D	05/15/66	07/28/66	20
SCHULMAN			66-040A-01			
	NIMBUS 2,AVCS		66-040A-01B	05/15/66	08/31/66	20
	WORLD MONTAGE CAT, ON M/FICHE		69-037A			
NIMBUS 3		04/14/69	69-037A-00G	04/14/69	05/31/70	21
	DATA CAT EXPERMNT OPERATNS, FICHE		69-037A-06			
BRANCHFLOWER			69-037A-06A	04/14/69	05/31/70	21
	NIMBUS 3,IMAGE DISSECTOR CAMERA		69-037A-02			
CHERRIX			69-037A-02A	04/22/69	01/31/70	21
	IDCS WORLD MONTAGE CAT,MICROFICHE		69-037A-02B	04/22/69	01/31/70	21
	NIMBUS 3,HIGH RES. IR RADIOMETER		69-037A-02C	04/17/69	03/21/70	21
	NIGHTTIME PHOTOFACSIMILE FILMS		69-037A-02D	04/14/69	05/31/70	21
	DAYTIME PHOTOFACSIMILE FILM		69-037A-03			
	HRIR METEOR. RADIATION TAPES		69-037A-03A	04/15/69	07/01/69	21
HANEL			69-037A-05			
	NIMBUS 3,IR INTERFEROMETER SPECT.		69-037A-05A	04/14/69	02/05/70	22
MCCULLOCH			69-037A-05B	04/15/69	02/04/70	22
	NIMBUS 3,MED.RES. IR RADIOMETER		69-037A-05C	04/14/69	05/31/70	22
	HRIR PHOTOFACSIMILE FILMS		69-037A-04			
	HRIR METEOR. RADIATION TAPES		69-037A-04A	04/14/69	06/19/70	22
WARK			70-025A			
	NIMBUS 3,SAT. IR SPECT. (SIRS)		70-025A-00D	04/18/70	04/30/72	22
	SIRS RADIANCE TAPES		70-025A-06			
NIMBUS 4		04/08/70	70-025A-06A	04/18/70	04/08/71	22
	DATA CATALOG OF EXPERMNT OPERATNS		70-025A-03			
BRANCHFLOWER			70-025A-03A	04/09/70	01/30/71	22
	NIMBUS 4,IMAGE DISSECTOR CAMERA		70-025A-05			
HANEL			70-025A-05B	04/10/70	05/06/77	22
	IDCS WORLD MONTAGE CAT,MICROFICHE		70-025A-05E	04/09/70	05/06/77	23
HEATH			70-025A-05H	04/10/70	12/16/71	23
	NIMBUS 4,IR INTER. SPECT. (IRIS)		70-025A-05I	04/10/70	12/16/71	23
	IRIS RADIANCE TAPES		70-025A-05J	04/10/70	05/02/77	23
	NIMBUS 4,BACKSCATTER UV SPEC(BUY)		70-025A-05P	04/10/70	05/06/77	23
	BUY RADIANCE VALUES (U-TAPE)		70-025A-05Q	04/10/70	05/06/77	23
	PRIMARY DATA BASE TAPES (PDB)		70-025A-10			
	BUY DARK CURRENT STUDY MSTR DATA		70-025A-10A	07/27/70	01/30/73	23
	BUY DARK CURRENT STUDY WORK DATA		70-025A-02			
	ZONAL MEANS TAPE (ZMT)		70-025A-02A	04/18/70	04/08/71	24
	COMPRESSED OZONE PROFILE TP(CPDZ)					
	TOTAL + PROFILE O3 TP (HDBUY)					
HOUGHTON						
	NIMBUS 4,SELECTIVE CHOPPER RAD.					
MCCULLOCH						
	SCR RADIANCE TAPES					
	NIMBUS 4,TEMP-HUMID. IR RAD(THIR)					
	11.5-MICRON CLOUD MONTAGE,FILM					

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NIMBUS 5	MARK HOUGHTON HOVIS MCCULLOCH SMITH STAE LIN WILHEIT, JR.	12/11/72	6.7-MICRON CLOUD MONTAGE, FILM	70-025A-02B	04/18/70 04/08/71 24
			NIMBUS 4 THIR DATA CATALOGS, FICHE	70-025A-02C	04/18/70 04/08/71 24
			11.5-MICRON CLOUD RADIANCE TAPE	70-025A-02D	04/10/70 02/13/71 24
			6.7-MICRON CLOUD RADIANCE TAPE	70-025A-02E	04/14/70 03/25/71 24
			NIMBUS 4, SAT. IR SPECT. (SIRS)	70-025A-04	
			SIRS RADIANCE TAPES	70-025A-04A	04/08/70 04/08/71 24
				72-097A	
			DATA CATALOG OF EXPERIMENT OPERATIONS	72-097A-00D	12/19/72 07/31/74 24
			NIMBUS 5, SELECTIVE CHOPPER RAD.	72-097A-02	
			SCR RADIANCE TAPES	72-097A-02A	12/13/72 12/26/74 24
			NIMBUS 5, SFC COMP MAPPING RAD	72-097A-05	
			SFC COMPOSITION MAPPING RAD TAPES	72-097A-05A	12/11/72 12/30/72 25
			NIMBUS 5, TEMP-HUMIDITY IR RAD	72-097A-08	
			11.5-MICRON CLOUD MONTAGE, FILM	72-097A-08A	12/19/72 03/12/75 25
			6.7-MICRON CLOUD MONTAGE, FILM	72-097A-08B	12/19/72 03/12/75 25
			11.5-MICRON CLOUD RADIANCE TAPE	72-097A-08C	12/19/72 02/07/74 25
			6.7-MICRON CLOUD RADIANCE TAPE	72-097A-08D	12/19/72 02/07/74 25
			NIMBUS 5, IR TEMP PROFILE RAD.	72-097A-01	
			RADIANCE OBSERVATIONS ON TAPE	72-097A-01A	02/14/75 09/30/76 25
			NIMBUS 5, MICROWAVE SPECTROMETER	72-097A-03	
			NEWS OUTPUT TAPES (NEWSOT)	72-097A-03B	12/18/72 10/31/73 25
			NEWS OUTPUT TP (NEWSOT) ON M/FICHE	72-097A-03B	12/18/72 12/31/73 25
			NEWS BRIGHTNESS TEMP - MICROFICHE	72-097A-03C	12/17/72 12/31/73 25
			NIMBUS 5, ELEC SCAN MICROWAVE RAD	72-097A-04	
			ESMR CALIB BRIGHT TEMP (CBT) TAPES	72-097A-04A	12/11/72 05/16/77 26
			SELECTED ESMR COLOR IMAGES	72-097A-04B	12/15/72 02/10/73 26
			ESMR 70 MM PHOTOFACSIMILE FILM	72-097A-04C	12/11/72 05/14/75 26
NIMBUS 6	GILLE MCCULLOCH SMITH STAE LIN WILHEIT, JR.	06/12/75	SATELLITE-DERIVED OCEANIC RAINFALL	72-097A-04D	12/11/72 02/28/75 26
			BRIGHTNESS TEMP + SEA ICE CONCENT	72-097A-04E	01/01/73 12/31/76 26
				75-052A	
			NIMBUS 6, LIMB RAD INVER RAD, LRIR	75-052A-04	
			INVR TMP+OZONE PRFL ARCH TP (IPAT)	75-052A-04A	06/20/75 01/06/76 26
			NIMBUS 6, TEMP-HUMIDITY IR RAD	75-052A-12	
			11.5-MICRON CLOUD MONTAGE, FILM	75-052A-12A	07/14/75 02/13/77 26
			6.7-MICRON CLOUD MONTAGE, FILM	75-052A-12B	07/14/75 02/13/77 26
			11.5-MICRON CLOUD RADIANCE TAPE	75-052A-12C	06/18/75 09/14/76 27
			6.7-MICRON CLOUD RADIANCE TAPE	75-052A-12D	06/18/75 05/06/77 27
			NIMBUS 6, HIGH RES IR SNDR (HIRS)	75-052A-02	
			HIRS BRIGHTNESS TEMP ON 70-MM FILM	75-052A-02A	06/13/75 05/26/76 27
			HIRS/SCAMS RADN, TMP+HUMIDITY TP	75-052A-02B	08/17/75 03/04/76 27
			NIMBUS 6, SCANNING MICROWAVE SPECT	75-052A-10	
			SCAMS OUTPUT TP OF H2O+TMP (SOTA)	75-052A-10A	06/15/75 05/29/76 27
			SCAMS RADN, H2O+TMP ON 70-MM FILM	75-052A-10B	06/15/75 03/02/76 27
			HIRS/SCAMS RADN, TMP+HUMIDITY TP	75-052A-10C	08/17/75 03/04/76 27
			NIMBUS 6, ELEC SCAN MICRO RAD, ESMR	75-052A-03	
			ESMR BRIGHTNESS TMP ON 70-MM FILM	75-052A-03B	06/22/75 08/11/77 28
NIMBUS 7	GLOERSEN HEATH KYLE MCCORMICK	10/24/78	NIMBUS 7, SMR-SCANNING MICROWAVE RAD	78-098A	
			ANTENNA TEMPERATURE TAPE (TAT)	78-098A-08	10/25/78 06/29/88 28
			HOR+VER POLARIZ BRIGHT TMP (CELL-ALL)	78-098A-08A	10/29/78 08/25/87 28
			SEA ICE, PARM 37-GHZ CHAN (PARM-30)	78-098A-08B	10/29/78 10/29/86 28
			PARAM OF LAND AND OCEAN (PARM-LO)	78-098A-08C	10/29/78 10/29/86 28
			PARAM SEA ICE, SNOW+ICE (PARM-SS)	78-098A-08D	10/29/78 10/29/86 28
			MAPPED PARM SEA ICE+SNOW (MAP-SS)	78-098A-08E	10/25/78 10/25/83 28
			MAPPED PARM, 37-GHZ CHAN (MAP-30)	78-098A-08F	10/30/78 10/30/83 28
			MAPPED PARM OF LAND-OCEAN (MAP-LO)	78-098A-08G	10/30/78 10/26/83 28
			GRADIENT RATIO	78-098A-08H	10/30/78 10/31/82 29
			SEA ICE CONCENTRATION	78-098A-08I	10/30/78 10/31/82 29
			SPECTRAL GRADIENT	78-098A-08J	10/30/78 10/31/82 29
			SEA ICE AND OCEAN SURFACE TEMP	78-098A-08K	10/30/78 10/31/82 29
			SEA SURFACE WIND SPEED	78-098A-08L	10/30/78 10/31/82 29
			LIQUID WATER OVER OCEANS	78-098A-08M	10/30/78 10/31/82 29
			PERCENT POLARIZATION OVER TERRAIN	78-098A-08N	10/30/78 10/31/82 29
			WATER VAPOR OVER OCEANS	78-098A-08O	10/30/78 10/31/82 29
			BRIGHTNESS TEMPERATURE	78-098A-08P	10/30/78 10/31/82 29
			SEA SURFACE TEMP OVER OCEANS	78-098A-08Q	10/30/78 10/31/82 29
			SEA ICE MULTI-YEAR ICE FRACTION	78-098A-08R	10/30/78 10/31/82 30
			CALIBRATED TEMPERATURE TAPE (TCT)	78-098A-08S	10/30/78 10/31/82 30
			MIXEX BRIGHTNESS TEMPERATURE DATA	78-098A-08T	10/25/78 08/20/87 30
			0.5-DEG CAL. TEMP MAP (TCT) TAPE	78-098A-08X	11/27/83 04/29/84 30
			0.25-DEG CAL. TEMP MAP (TCT) TAPE	78-098A-08Y	10/25/78 05/02/87 30
			SMR PARMAP DATA ON TAPE	78-098A-08Z	10/25/78 08/20/87 30
NIMBUS 7	HEATH KYLE MCCORMICK	10/24/78	MIXEX-W SEA ICE CONCENTRATION	78-098A-08a	11/03/83 10/31/86 30
			COLORADO R SNOW PARM ATLAS DISK	78-098A-08b	02/01/83 02/28/83 30
			NIMBUS 7, BUY/TOMS-BACKSC UV/OZONE	78-098A-08c	12/05/78 04/21/86 30
			HDTOMS TOTAL OZONE DATA TAPE	78-098A-09	
			SBUV TOTAL+PROFIL OZON TP (HDSBUV)	78-098A-09C	10/31/78 12/17/88 31
			RAW UNITS TAPE-TOMS (RUT-T)	78-098A-09D	10/31/78 03/01/88 31
			RAW UNITS TAPE-SBUV DATA (RUT-S)	78-098A-09E	10/31/78 05/21/89 31
			SBUV ZONAL MEANS OZONE TP (ZMT-S)	78-098A-09F	10/31/78 05/21/89 31
			SBUV CMPRES PROFIL OZONE TP (CPDZ)	78-098A-09G	10/31/78 02/29/88 31
			DAILY GRID TOMS O3 TP (GRIDTOMS)	78-098A-09H	10/31/78 12/31/87 31
			SBUV CONT SCAN EARTH RAD TP, EARTH	78-098A-09I	10/31/78 03/31/89 31
			SBUV CONT SCAN SOLAR FLUX TP, SUNC	78-098A-09J	11/04/78 10/15/85 31
			SBUV TOTAL O3&PFL CONTOUR (PSC) TP	78-098A-09K	11/04/78 10/15/85 32
			NIMBUS 7, ERB-EARTH RADIATN BUDGET	78-098A-09W	11/07/78 09/30/86 32
			RADN BUDGET MASTER ARCH TP, MAT	78-098A-07	
			SOLAR + EARTH FLUX DATA TP (SEFDT)	78-098A-07A	11/16/78 11/06/88 32
			MAPPED RADN DATA MATRIX TP	78-098A-07B	11/01/78 04/30/89 32
			ZONAL MEANS RADN TAPE (ZMT)	78-098A-07C	11/16/78 05/05/87 32
			SUB-TARGET RADIANCE TAPE (STRT)	78-098A-07E	11/16/78 11/30/85 32
			POST MAT CALIBRATION TP (DELMAT)	78-098A-07G	11/16/78 01/30/80 32
			SEASONAL AVG RADN BUDGET (SAVER)	78-098A-07H	11/01/78 11/05/87 32
			ERB SOLAR ANALYSIS TAPE (ESAT)	78-098A-07I	12/02/78 03/01/86 33
			MATRIX MONTHLY AVG SUMRY TP (EMST)	78-098A-07L	11/16/78 03/31/86 33
			NIMBUS 7, SAM-II, STRAT AEROSOL MEA	78-098A-07O	11/01/78 10/31/86 33
				78-098A-06	

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		RADIANCE DATA ARCHIVE TAPE (RDATA)	78-098A-06A	11/01/78	10/31/85	33
		BETA-AEROSOL NO DEN ARCH (BANAT)	78-098A-06B	11/01/78	11/01/87	33
RUSSELL, 3RD		NIMBUS 7, LIMB IR MON STRATO(LIMS)	78-098A-01			
		TEMP+MIX RATIO PROFIL TP(LAIPAT)	78-098A-01A	10/25/78	05/29/79	33
		RADIANCE ARCHIVAL TAPE (RAT)	78-098A-01B	10/25/78	05/30/79	33
		TEMP, MIX RATIO, HT. MAPS (LAMAT)	78-098A-01C	10/25/78	05/29/79	33
		RADIANCE PROFIL TAPE(PROFILE-R)	78-098A-01F	10/25/78	05/30/79	34
		90-D TEMP, MIX RAT, HT MAPS(LASMAT)	78-098A-01L	10/25/78	05/29/79	34
STOWE		NIMBUS 7, TEMP-HUMID IR RAD (THIR)	78-098A-10			
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APPENDICES

APPENDIX A
SUPPLEMENT TO VOLUME 4A

This appendix contains descriptions of the few spacecraft and investigations that were not included in Volume 4A. The format is the same as in Volume 4A.

***** ERBS *****

SPACECRAFT COMMON NAME- ERBS
ALTERNATE NAMES- EARTH RAD BUDGET SAT, ERBS-A
15354

NSSDC ID- 84-1088

LAUNCH DATE- 10/05/84

ORBIT PARAMETERS
ORBIT TYPE- GECENTRIC
ORBIT PERIOD- 96.8 MIN
PERIAPSIS- 598. KM ALT
EPOCH DATE- 12/11/84
INCLINATION- 57. DEG
APOAPSIS- 609. KM ALT

PERSONNEL
MC - D.S. DILLER
SC - R.A. SCHIFFER
PM - C.L. WAGNER, JR.
PS - M.D. KING
NASA HEADQUARTERS
NASA HEADQUARTERS
NASA-GSFC
NASA-GSFC

BRIEF DESCRIPTION

The Earth Radiation Budget Satellite (ERBS) was designed to be a 2-yr mission to gather required radiation budget data, aerosol data, and ozone data to assess climate change and ozone depletion. The two experiments were the Earth Radiation Budget Experiment (ERBE) and the Stratospheric Aerosol and Gas Experiment II (SAGE II). An ERBE is also carried on two TIROS-N series (NOAA 9 and NOAA 10) missions.

-----ERBS, BARKSTROM-----

INVESTIGATION NAME- EARTH RADIATION BUDGET EXPERIMENT (ERBE)

NSSDC ID- 84-1088-01

PERSONNEL
TL - B.R. BARKSTROM
NASA-LARC

BRIEF DESCRIPTION

The Earth Radiation Budget Experiment (ERBE) was designed to measure the energy exchange between the earth-atmosphere system and space. The measurements of global, zonal, and regional radiation budgets on monthly time scales helped in climate prediction and in the development of statistical relationships between regional weather and radiation budget anomalies. The ERBE consisted of two instrument packages: the nonscanner (ERBE-NS) instrument and the scanner (ERBS-S) instrument. The ERBE-NS instrument had five sensors, each using cavity radiometer detectors. Four of them were primarily earth-viewing. Two wide-field-of-view (FOV) sensors viewed the entire disk of the earth from limb to limb, approximately 135 deg. Two medium FOV sensors viewed a 10-deg region. The fifth sensor was a solar monitor that measured the total radiation from the sun. Of the four earth-viewing sensors, one wide and one medium FOV sensor made total radiation measurements; the other two measured reflected solar radiation in the shortwave spectral band between 0.2 and 5 micrometers by using Suprasil-W filters. The earth-emitted longwave radiation component was determined by subtracting the shortwave measurement from the total measurement. The ERBE-S instrument was a scanning radiometer that contained three narrow FOV channels. One channel measured reflected solar radiation in the shortwave spectral interval between 0.2 and 5 micrometers. Another channel measured earth-emitted radiation in the longwave spectral region from 5 to 50 micrometers. The third channel measured total radiation with a wavelength between 0.2 and 50 micrometers. All three channels were located within a continuously rotating scan drum, which scanned the FOV across track sequentially from horizon to horizon. Each channel made 74 radiometric measurements during each scan, and the FOV of each channel was 3 by 4.5 deg, which covered about 40 km at the earth's surface. The ERBE-S also viewed the sun for calibration. Additional information can be obtained from the "Earth Radiation Budget Experiment (ERBE): An Overview," J. Energy, vol 6, pp. 141-146 (1982), by B.R. Barkstrom and J.B. Hall, Jr.

-----ERBS, MCCORMICK-----

INVESTIGATION NAME- STRATOSPHERIC AEROSOL AND GAS (SAGE)

NSSDC ID- 84-1088-02

PERSONNEL
PI - M.P. MCCORMICK
OI - L.R. MCMASTER
OI - W.R. VAUGHAN
NASA-LARC
NASA-LARC
NASA-LARC

BRIEF DESCRIPTION

The SAGE sensor was a multispectral channel radiometer that measured the extinction of solar radiation intensity during solar occultation. As the spacecraft emerged from the earth's shadow during each orbit, the sensor acquired the sun and measured the solar intensity in seven wavelength bands centered between 0.385 and 1.0 micrometers as it scanned the sun vertically. As the spacecraft continued in orbit, the line

of sight from the spacecraft to the rising sun scanned the earth's atmosphere, resulting in a measurement of the attenuated solar intensity at different atmospheric layers. The procedure was then repeated in a reverse sense during spacecraft sunset. Each sunrise or sunset event was monitored from the top of the clouds to approximately 150 km above the earth's surface. The sensor had an instantaneous field-of-view of approximately 0.5 km measured at the horizon for a 600-km orbit. The dynamic range of each radiometric channel was approximately 4000, and the uncertainty in any radiometric measurement was specified to be less than 0.1% of the unattenuated solar intensity (the sensor was partially self-calibrating in that a measurement of the unattenuated solar intensity was made prior to each spacecraft sunset and following each spacecraft sunrise). Furthermore, zero intensity levels were reached every time the elevation mirror scanned off the sun. The instrument module consisted of optical and electronic subassemblies mounted side by side. The optical subassembly consisted of a flat scanning mirror, Cassegrain optics, and a detector package. The entire optical subassembly was gimbaled in azimuth. The azimuth servo employed sun sensors driven to null on the center of the sun to a tolerance of plus or minus 1 arc-min. At the beginning of a sunrise or sunset event, the instrument slewed in azimuth to a position to acquire the sun. Upon acquisition in azimuth, the mirror servo scanned in elevation until the sun was acquired. The scan range was then reduced to scanning back and forth across the solar image only. The solar input was reflected from the scan mirror through the Cassegrain telescope, which produced a solar image upon the science detector aperture. This image was scanned across the aperture by the motion of the scan mirror. The radiation through the aperture was dispersed, and the beams representing the wavelength bands were then collected and applied to silicon pin diode detectors. The outputs of the detectors were fed to signal-conditioning amplifiers, whose outputs went to the PCM encoder. The PCM encoder multiplexed and digitized the signals and then transferred the digital data to the ERBS data system. The radiometric data for each wavelength channel were sampled 64 times per second or approximately four times per kilometer of tangent altitude, and they were digitized to 12 bits. These data, plus science supporting data and instrument module housekeeping data, totaled approximately 6 kbps.

-----GEMINI 5, NEY-----

INVESTIGATION NAME- ZODIACAL LIGHT PHOTOGRAPHY

NSSDC ID- 65-068A-01

PERSONNEL
PI - E.P. NEY
U OF MINNESOTA

BRIEF DESCRIPTION

A hand-held camera (F/1), equipped with automatic triggering, was used by the Gemini crew to obtain photographs of airglow, zodiacal light, the Milky Way, and star fields. The camera, which was specially constructed for the experiment, had a 50- by 130-deg field-of-view. A transistorized timer on the camera was programmed to take frames in a sequence in which the exposure time started at 0.5 s, was doubled each time, and ended at 3 min. The shutter was closed for 20 s between frames to allow for spacecraft reorientation.

-----GEMINI 9, NEY-----

INVESTIGATION NAME- ZODIACAL LIGHT PHOTOGRAPHY

NSSDC ID- 66-047A-01

PERSONNEL
PI - E.P. NEY
U OF MINNESOTA

BRIEF DESCRIPTION

A hand-held camera (F/1), equipped with automatic triggering, was used by Gemini crewmen to obtain photographs of airglow, zodiacal light, the Milky Way, and star fields. This camera, which was specially constructed for the experiment, had a 50-deg by 130-deg field-of-view. A transistorized timer on the camera was programmed to take 30-s exposures, with the shutter closed for 10 s between frames to allow for spacecraft reorientation.

-----GEMINI 10, NEY-----

INVESTIGATION NAME- ZODIACAL LIGHT PHOTOGRAPHY

NSSDC ID- 66-066A-01

PERSONNEL
PI - E.P. NEY
U OF MINNESOTA

BRIEF DESCRIPTION

A hand-held camera (F/1), equipped with automatic triggering, was used by Gemini crewmen to obtain photographs of airglow, zodiacal light, the Milky Way, and star fields. This camera, which was specially constructed for the experiment, had a 50-deg by 130-deg field-of-view. A transistorized timer on the camera was programmed to take 30-s exposures, with the shutter closed for 10 s between frames to allow for spacecraft reorientation.

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 ***** STS-41G *****

SPACECRAFT COMMON NAME- STS-41G
 ALTERNATE NAMES- OSTA-3/STS 41-G, 15353

NSSDC ID- 84-108A

LAUNCH DATE- 10/05/84

ORBIT PARAMETERS
 ORBIT TYPE- GEDCENTRIC EPOCH DATE- 10/05/84
 ORBIT PERIOD- 88.9 MIN INCLINATION- 57. DEG
 PERIAPSIS- 216. KM ALT APDAPSIS- 229. KM ALT

PERSONNEL
 MC - L.J. DEMAS NASA HEADQUARTERS
 SC - M. SETTLE NASA HEADQUARTERS

BRIEF DESCRIPTION

The 13th flight of the Space Shuttle (STS 41-G) carried the OSTA-3 (Office of Space and Terrestrial Applications) payload designed for conducting experiments in earth remote sensing. This experiment payload consisted of 1) a Shuttle Imaging Radar (SIR-B) for studies of the earth's surface, 2) a Large Format Camera (LFC) for cartographic mappings of the earth, 3) a Measurement of Air Pollution from Satellite (MAPS) experiment to determine the distribution of CO in the atmosphere, and 4) a Feature Identification and Location Experiment (FILE) for classification of surface materials. The SIR-B was an upgraded version of the SIR-A flown on the OSTA-1 payload during the STS-2 mission (NSSDC ID 81-111A-01). The MAPS and FILE sensors were the reflexes of those same instruments on the OSTA-1 payload (NSSDC ID 81-111A-04 and 81-111A-03). The mission lasted 8 days and, except for SIR-B, all instruments met their prelaunch requirements.

-----STS-41G, ELACHI-----

INVESTIGATION NAME- SHUTTLE IMAGING RADAR-B (SIR-B)

NSSDC ID- 84-108A-01

PERSONNEL
 PI - C. ELACHI NASA-JPL

BRIEF DESCRIPTION

The primary purpose of the Shuttle Imaging Radar-B (SIR-B) experiment was to provide data for studies of geography, geology, hydrology, oceanography, vegetation, and ice applications. The SIR-B was a side-looking, synthetic aperture radar that illuminated the earth's surface with horizontally polarized (HH) microwave radiation transmitted at L-band frequency 1.28 GHz (wavelength 23 cm). The SIR-B antenna was mechanically tilted while the Shuttle's payload bay was facing the earth. This enabled researchers to obtain radar imagery of a specific area at up to six incidence angles ranging from 15 to 60 deg. Multiple-incidence-angle radar imagery was used to distinguish surface materials on the basis of their roughness characteristics. With a 12-MHz bandwidth and 20% degradation in the pulse, the ground range resolution was 17 m at a 60-deg incidence angle and was 58 m at 15 deg. The azimuth resolution was 25 m at all incidence angles. The swath width of the SIR-B imagery was 20-50 km. The original plan was to obtain 42 h of digital data and 8 h of optical data. A number of problems severely impacted the SIR-B data collection. They included the Ku-band antenna failure, a TDSS link lost for more than 12 h, and anomalies in the RF feed system to the antenna. As a result, only 7 1/2 h of digital data and 8 h of optical data were collected. The digital data were transmitted from the Shuttle through the Tracking and Data Relay Satellite System (TDRSS) to White Sands, New Mexico. White Sands relayed the SIR-B data via Domsat to GSFC. The digital tapes were then sent to JPL to be processed to imagery. The optical data were processed by an optical correlator at JPL.

-----STS-41G, MOLLBERG-----

INVESTIGATION NAME- LARGE FORMAT CAMERA (LFC)

NSSDC ID- 84-108A-02

PERSONNEL
 PI - B. MOLLBERG NASA-JSC

BRIEF DESCRIPTION

The Large Format Camera (LFC) was a photographic camera with a 305-mm focal length, an F/6 aperture, and a film format of 23 by 46 cm. The objective was to evaluate the utility of orbital photography for cartographic mapping and land use studies at scales of 1:50,000. To minimize smearing effects, the camera's film platen moved horizontally along the Shuttle's line of flight when the shutter was open. A ground resolution of 10 m was achieved at altitudes of 200 to 250 km with standard photographic films. The LFC was able to obtain overlapping stereoscopic coverage along the Shuttle's flight

path with base-to-height ratios of 0.3, 0.6, 0.9, and 1.2. A total of 2289 photographic frames were obtained, and the experiment was considered a success.

 ***** STS-51B/SPACELAB 3 *****

SPACECRAFT COMMON NAME- STS-51B/SPACELAB 3
 ALTERNATE NAMES- SPACELAB 3, SPACE TRANSPORT SYS 51-B 15665

NSSDC ID- 85-034A

LAUNCH DATE- 04/29/85

ORBIT PARAMETERS
 ORBIT TYPE- GEDCENTRIC EPOCH DATE- 01/29/80
 ORBIT PERIOD- 92.0 MIN INCLINATION- 57. DEG
 PERIAPSIS- 350. KM ALT APDAPSIS- 350. KM ALT

PERSONNEL
 MC - S. SMITH NASA HEADQUARTERS
 SC - J.S. THEON NASA HEADQUARTERS
 PM - J. CREMIN NASA-MSFC
 PS - G.H. FICHTL NASA-MSFC

BRIEF DESCRIPTION

Spacelab 3 consisted of a Spacelab long module and a pallet. The primary objective of the mission was to conduct application, science, and technology experiments requiring a low-gravity environment and an extended-duration (7 days) stable vehicle attitude. Payload specialists were sent into orbit to conduct the scientific investigations. The investigations selected for the Spacelab 3 mission were from the United States, France, and India. The experiments represented a total of five different disciplines, including material science, life sciences, fluid mechanics, atmospheric science, and astronomy. Two of the investigations, one in material science and one in astronomy, had already flown aboard Spacelab 1. Many of the Spacelab 3 investigations were scheduled to be modified and reflown on later missions to further explore the discoveries of this mission. Some of the experiments were located in the module, some on the pallet in the payload bay, and one at middeck. The mission successfully demonstrated the capability of Spacelab for multidiscipline research in microgravity.

-----STS-51B/SPACELAB 3, FARMER-----

INVESTIGATION NAME- ATMOSPHERIC TRACE MOLECULES OBSERVED BY SPECTROSCOPY (ATMOS)

NSSDC ID- 85-034A-14

PERSONNEL
 PI - C.B. FARMER NASA-JPL
 CI - D. RAPER NASA-JPL
 CI - R.H. NORTON NASA-JPL
 CI - R. BEER NASA-JPL
 CI - F.W. TAYLOR OXFORD U
 CI - M.T. CHAHINE NASA-JPL
 CI - R. TOTH NASA-JPL
 CI - R. SCHINDLER NASA-JPL
 CI - J. BRECKINRIDGE NASA-JPL
 CI - J.H. SHAW OHIO STATE U
 CI - J. SUSSKIND NASA-GSFC
 CI - J.M. RUSSELL, 3RD NASA-LARC
 CI - R. ZANDER U OF LIEGE
 CI - J.E. HARRIES RUTHERFORD APPLETON L.
 CI - S. WOFSY HARVARD U

BRIEF DESCRIPTION

The Atmospheric Trace Molecules Observed by Spectroscopy (ATMOS) experiment was flown to demonstrate the capability to monitor environmental quality by surveying the atmosphere for trace constituents and by identifying their sources, flow patterns, and decay mechanisms. In its most general form, the ATMOS experiment objective was to determine concentration profiles for a large number of stratospheric species for altitudes from 20 to 80 km, with a vertical resolution of 2 km. The ATMOS instrument viewed the sun through the stratosphere and measured the spectral absorption of solar energy. Each data-taking run was initiated before the sun emerged from or disappeared behind the earth. Data from the instrument for these sunrise and sunset limb encounters were interferograms that were processed on the ground to provide absorption spectra. The instrument was a continuous-scanning Fourier spectrometer that operated in the 2- to 16-micrometer wavelength region and generated one interferogram each second, with a spectral resolution of 0.01 (1/cm). The ATMOS consisted of four major systems: a suntracker for precise solar pointing, an input optical system that included a telescope and a data handling system, an interferometer for wavelength measurements, and an infrared detector sensitive to radiation in the 3- to 16-micrometer wavelength range. The data, in conjunction with engineering and housekeeping data, were converted into a serial PCM bit stream in a format compatible with the Spacelab high-rate, real-time telemetry system. The experiment was considered a success.

APPENDIX B

DEFINITIONS

ACRIM	Active Cavity Radiometer Irradiance Monitor
AEM	Application Explorer Mission
AFGWC	Air Force Global Weather Central
AOIPS	Atmospheric and Oceanographic Image Processing System
ASCII	American Standard Code for Information Interchange
AVHRR	Advanced Very High Resolution Radiometer
BANAT	Beta Aerosol Number Density Tape (data product)
BCD	Binary coded decimal
bpi	Bits per inch
BUV	Backscatter Ultraviolet (spacecraft instrument)
CDC	Control Data Corporation
CDF	Common Data Format
CMATRIX	Cloud data in matrix format (data product)
COADS	Comprehensive Ocean-Atmosphere Data Set
COSPAR	Committee on Space Research (ICSU)
CPOZ	Compressed Profile Ozone (data product)
CZCS	Coastal Zone Color Scanner
EBCDIC	Extended Binary Coded Decimal Interchange Code
ECMWF	European Center for Medium Range Weather Forecasts
ERB	Earth Radiation Budget (spacecraft instrument)
ERBE	Earth Radiation Budget Experiment
ERBS	Earth Radiation Budget Satellite
EREP	Earth Resources Experiment Package
EROS	Earth Resources Observation System
ESMR	Electronically Scanning Microwave Radiometer
ETO	Extended time observation
FAO	Food and Agricultural Organization (United Nations)
FGGE	First GARP Global Experiment (now Global Weather Experiment)
FIRE	First ISCCP Regional Experiment
FOV	Field-of-view
GAC	Global area coverage
GARP	Global Atmospheric Research Program
GISS	Goddard Institute for Space Studies (NASA)
GOES	Geostationary Operational Environmental Satellite
HCMM	Heat Capacity Mapping Mission
HCMR	Heat Capacity Mapping Radiometer
HIRS	High Resolution Infrared Radiation Sounder
HRPT	High Resolution Picture Transmission
HRV	High Resolution Visible (spacecraft instrument)
ICSU	International Council of Scientific Unions
IDAMS	Image Display and Manipulation System
IFOV	Instantaneous field-of-view

IR	Infrared
ISCCP	International Satellite Cloud Climatology Project
JPL	Jet Propulsion Laboratory (NASA)
K	Kelvin
LAC	Local area coverage
Level 0	Raw telemetry data
Level I	Data that have been calibrated into engineering units (e.g., radiances, brightness, temperatures) and located with respect to time, orbit, and altitude
Level II	Climate parameters (e.g., sea surface temperature, soil moisture) at full spatial and temporal resolution
Level III	Climate parameters spatially and temporally averaged
LFC	Large Format Camera (spacecraft instrument)
LIMS	Limb Infrared Monitor of the Stratosphere (spacecraft instrument)
MFOV	Medium field-of-view
MOMS	Modular Optoelectric Multispectral Scanner
MSS	Multispectral Scanner
MSU	Microwave Sounding Unit
NASA	National Aeronautics and Space Administration
NCAR	National Center for Atmospheric Research (NSF)
NCDC	National Climatic Data Center (NOAA)
NCDS	NASA Climate Data System
NESDIS	National Environmental Satellite, Data, and Information Service (NOAA)
NESS	National Environmental Satellite Service (now NESDIS)
NET	Nimbus Experiment Team
NFOV	Narrow field-of-view
n.m.	Nautical mile
NMC	National Meteorological Center (NOAA)
NOAA	National Oceanic and Atmospheric Administration
NODS	NASA Ocean Data System
NOPS	Nimbus Observation Processing System
NSF	National Science Foundation
NSSDC	National Space Science Data Center
OCE	Ocean Color Experiment
OI	Other investigator
OLS	Operational Linescan System (spacecraft instrument)
OSTA	Office of Space and Terrestrial Applications (NASA)
PI	Principal investigator
PM	Project manager
PS	Project scientist
SAGE	Stratospheric Aerosol and Gas Experiment
SAM II	Stratospheric Aerosol Measurement II (spacecraft instrument)
SAO	Smithsonian Institution Astrophysical Observatory
SAR	Synthetic Aperture Radar
SBUV	Solar Backscatter Ultraviolet (spacecraft instrument)
SDSD	Satellite Data Service Division (NOAA)
SIR	Shuttle Imaging Radar

SMMR	Scanning Multichannel Microwave Radiometer
SMS	Synchronous Meteorological Satellite
SR	Scanning Radiometer
SSU	Stratospheric Sounding Unit
THIR	Temperature-Humidity Infrared Radiometer
TIROS-N	Television and Infrared Observation Satellite, N Series
TL	Team leader
TM	Team member
TM	Thematic Mapper
TOMS	Total Ozone Mapping Spectrometer
TOVS	TIROS Operational Vertical Sounder
TRF	Technical Reference File. A computerized, space-investigation-oriented, bibliographic list maintained by NSSDC. Journal publications and other documents are cited and can be retrieved by author name, title, or NSSDC ID of relevant investigation. The TRF accession number begins with the letter B and contains five digits; for example, B29538.
UV	Ultraviolet
VAS	VISSR Atmospheric Sounder
VISSR	Visible and Infrared Spin-Scan Radiometer
WFOV	Wide field-of-view
WORM	Write-once-read-many (optical disk)

APPENDIX C STANDARD EPHEMERIS DATA SETS

In many of the NSSDC earth science data sets, the spacecraft position data (altitude, latitude, and longitude vs. time) and various position-related geophysical parameters are merged with the data from the investigations. In such cases, the investigation data sets provide essentially all the information needed for the analysis of the data. In other cases, however, the spacecraft ephemeris must be obtained from separate data sets, called "world maps," which are identified by the spacecraft ID followed by the designations 00A and 00B. Thus, the NSSDC IDs 64-064A-00A and 64-064A-00B represent ephemeris data for the BE-B spacecraft (64-064A). Typically, the 00A data sets contain predicted spacecraft positions (based upon earlier tracking information) and the 00B data sets provide more accurate spacecraft ephemeris data (based upon tracking data obtained during the corresponding orbits). Although the 00A and 00B data sets are not completely uniform in their respective contents and formats, the following descriptions provide the main features of each type of data set.

00A Predicted World Maps Listed in Microfilm

Each 00A data set contains a list of predicted spacecraft positions and is usually produced on reels of 16-mm microfilm at Goddard Space Flight Center (GSFC). The positions, which are listed at 1-min intervals, are based on predicted orbital elements. Each line of data contains the Greenwich mean time (to 1 s) and the geodetic altitude, latitude, and longitude. An asterisk identifies each position at which the satellite was in sunlight.

00B Refined World Maps or Interim Definitive World Maps Listed on Microfilm

Each 00B data set contains a list of spacecraft positions based on actual tracking data and is usually produced on reels of 16-mm microfilm at GSFC. Each 00B data set is either a Refined World Map or an Interim Definitive World Map. Each type lists spacecraft positions at 1-min intervals and contains the date, Greenwich mean time (to 1 min), and geodetic altitude, latitude, and longitude. The Refined World Maps also list six special spacecraft position points in each orbit: the sunlight entrance and exit points, the northbound and southbound equatorial crossing points, and the northernmost and southernmost points. The Refined World Maps include a flag on each point at which the spacecraft was in sunlight. The Interim Definitive World Maps use the word "TWILIGHT" to flag the points for which the upper limb of the sun was between 0 and 6 deg below the visual horizon. The Interim Definitive World Maps also include lines of tracking station data that contain the station name, Greenwich mean time (to 0.001 s), zenith angle of the spacecraft, distance from station to spacecraft, and direction of travel of the spacecraft. There is usually a line of tracking station data for each station's acquisition and loss of the spacecraft signal, inserted chronologically between the spacecraft position data lines. In the early 1960s the Interim Definitive World Maps were phased out and superseded by the Refined World Maps.

AVAILABLE 00A AND 00B EPHEMERIS DATA SETS

This table covers all the spacecraft included in this volume. The headings "A" and "B" represent data sets 00A and 00B, respectively. A "Y" indicates that the data set is available, while an "N" indicates that it is not available.

Spacecraft Name	A	B	Spacecraft Name	A	B
ASTP-Apollo	N	N	LOGACS 1, Agena	N	N
ATS 3	Y	N	Nimbus 1	Y	N
BE-B	Y	Y	Nimbus 2	Y	N
BE-C	Y	Y	Nimbus 3	Y	N
DMSP 5B/F2	N	N	Nimbus 4	Y	N
DMSP 5B/F3	N	N	Nimbus 5	Y	N
DMSP 5B/F4	N	N	Nimbus 6	Y	N
DMSP 5B/F5	N	N	Nimbus 7	Y	N
DMSP 5C/F1	N	N	NOAA 9	N	N
DMSP 5C/F2	N	N	SAGE	Y	N
DMSP 5D-1/F1	N	N	Skylab	Y	N
DMSP 5D-1/F2	N	N	SMS 1	Y	N
DMSP 5D-1/F3	N	N	SMS 2	Y	N
DMSP 5D-1/F4	N	N	STS 2/OSTA-1	N	N
Echo 2	Y	Y	STS-41G	N	N
EOLE 1	Y	N	STS-51B/Spacelab 3	N	N
ERBS	N	N	TIROS 2	Y	N
Gemini 5	N	N	TIROS 3	Y	N
Gemini 9	N	N	TIROS 4	Y	N
Gemini 10	N	N	TIROS 7	Y	N
GOES 1	Y	N			
GOES 2	Y	N			
GOES 3	Y	N			
HCMM	Y	N			

APPENDIX D
DIRECTORY OF SELECTED IMAGE DATA SETS

Spacecraft	Sensor	Data Location
Apollo	Cameras	EROS Data Center Sioux Falls, SD 57198 (605) 594-6511 Technical Applications Center University of New Mexico Albuquerque, NM 87131 (505) 277-3662
DMSP	OLS	World Data Center A for Glaciology National Snow and Ice Data Center Cooperative Institute for Research in Environmental Science (CIRES) Campus Box 449 University of Colorado Boulder, CO 80309 (303) 492-5171
Gemini	Hand-held cameras	EROS Data Center Sioux Falls, SD 57198 (605) 594-6511 Technical Applications Center University of New Mexico Albuquerque, NM 87131 (507) 277-3662
GOES/SMS	VISSR	NSSDC
	VAS	NOAA/NESDIS Satellite Data Services Division World Weather Building, Room 100 Washington, DC 20233 (301) 763-8111 Space Science and Engineering Center University of Wisconsin 1225 W. Dayton St. Madison, WI 53706 (608) 262-3762
HCMM	HCMR	NSSDC

Landsat	MSS TM	Earth Observation Satellite Company c/o EROS Data Center Sioux Falls, SD 57198 (800) 367-2801 (605) 594-2291 Earth Resources Browse Facility Bldg. 28/E203 Mail Code 620 NASA/GSFC Greenbelt, MD 20771 (301) 286-5170
Nimbus 7	CZCS	NOAA/NESDIS/NCDC Princeton Executive Center, Room 100 Washington, DC 20233 (301) 763-8400 NSSDC
NOAA	AVHRR	NOAA/NESDIS/NCDC Princeton Executive Center, Room 100 Washington, DC 20233 (301) 763-8400 Jim Tucker Code 623 NASA/GSFC Greenbelt, MD 20771
Seasat	SAR	NOAA/NESDIS/NCDC Princeton Executive Center, Room 100 Washington, DC 20233 (301) 763-8400
Shuttle	Hand-held cameras	NASA/JSC Mail Code AP3 Houston, TX 77058 (713) 483-8604 Technical Applications Center University of New Mexico Albuquerque, NM 87131 (505) 277-3662
	LFC	EROS Data Center Sioux Falls, SD 57198 (605) 594-6511 Chicago Aerial Survey, Inc. 2140 Wolf Rd. Des Plaines, IL 60018 (312) 298-1480

		Browse at NSSDC
	MOMS	DFVLR Remote Sensing Data Center Oberpfaffenhofen D-8031 Post Wessling Federal Republic of Germany
	SIR-A	NSSDC
	SIR-B	NSSDC & private company to be selected
		JPL SIR-B Data Center Mail Stop 300-233 Jet Propulsion Laboratory California Institute of Technology 4800 Oak Grove Dr. Pasadena, CA 91109 (818) 354-2386
Skylab	EREP	EROS Data Center Sioux Falls, SD 57198 (605) 594-6511
		Technical Applications Center University of New Mexico Albuquerque, NM 87131 (505) 277-3662
SPOT	HRV	Domestic requesters contact: SPOT Image Company 1897 Preston White Dr. Reston, VA 22091-4326 (703) 620-2200
		Overseas requesters contact: SPOT Image Company 16 Avenue Edouard Belin 31030 Toulouse Cedex France

APPENDIX E

NASA CLIMATE DATA SYSTEM

The NASA Climate Data System (NCDS), formerly known as the Pilot Climate Data System (PCDS), is an advanced information and data system for researchers in the earth sciences. With this system a scientist can locate, access, manipulate, and display climate-related data. Its extensive online capabilities include:

- An inventory of NCDS data holdings
- A range of data set selection capabilities to select desired data according to time or geographic area
- A variety of accessible data sets
- A variety of data manipulation utilities
- A flexible set of graphics display utilities
- An interface to statistical software
- An easy-to-use, flexible user interface

The online catalog provides information about selected climate parameter data sets and the associated sensor measurements from which they were derived. The descriptions include the characteristics, processing status, availability, and names of people to contact for further information, as well as information about planned data sets.

Many of the data sets described in the online catalog are products of NASA missions, but several associated NOAA data sets and related ground-based data sets are also described. Data sets described in the catalog contain experimental data for a diverse range of climate parameters extending from upper atmospheric trace constituents to sea air boundary measurements.

The online catalog was developed by the Data Management Systems Facility (Code 634), NASA/Goddard Space Flight Center, which is part of the National Space Science Data Center. NSSDC does not envision reproducing the entire catalog in hard copy format because of the volume of information but will occasionally publish a summary report.

Data sets from both satellite and conventional sources are provided by NCDS and include data from the First Global Atmospheric Research Program (GARP) Global Experiment, the World Monthly Surface Climatology data set, and several data sets generated by the International Satellite Cloud Climatology Project (ISCCP) and the First ISCCP Regional Experiment (FIRE). The data sets currently available to NCDS users are listed in the table that follows. It indicates the data set name, parameters, temporal and spatial characteristics, storage media, and output options. For cross-reference, NSSDC IDs used in other sections of this volume are also provided wherever appropriate.

NASA-sponsored climate researchers at universities and government agencies can access NCDS remotely over the Space Physics Analysis Network (SPAN) and by dial-in lines (GTE Telenet). Interested researchers may contact the NCDS User Support staff members at (301) 286-3209 or NCF::NCDSUSO.

DATA SETS AVAILABLE VIA NCDS
(as of 5/23/89)

ATMOSPHERIC COMPOSITION

Data Set NSSDC ID	Parameters	Temporal Coverage Resolution	Spatial Coverage Resolution	Remarks Volume Media
AEM-2 SAGE Profiles 79-013-A-01C	Aerosols, nitrogen dioxide, ozone	02/21/79 - 11/18/81, only sunset data after 6/79; full coverage every 18 days	Global from 72 deg N to 72 deg S, above cloud tops; horizontal: 1 km x 250 km; vertical: 1 km for heights below 25 km and 5 km for those above	185 Mbytes 33 tapes, CDF Reprocessed ozone to be available in late 1989
ERBS SAGE II Profiles 84-108B-02B 84-108B-02C	Aerosols, ozone, humidity, nitrogen dioxide	10/24/84 - 11/30/87, on- going; full coverage every 18 days for aerosols and ozone only, ongoing	Global from 80 deg N to 80 deg S, above cloud tops; horizontal: 1 km x 250 km; vertical: 1 km for heights below 25 km and 5 km for those above	62 Mbytes 6 tapes, CDF Humidity, nitrogen dioxide to be available in late 1989
Nimbus 4 BUVCPOZ 70-025A-05P	Albedo, ozone	04/10/70 - 05/06/77, daylight only; 14 days for global coverage, 32 sec/ observation	Global: 100 - 0.3 mb; horizontal: 200 km x 200 km; vertical: 8 km for heights above 25 km and 15 km for those below	214 Mbytes 4 tapes, CDF
Nimbus 7 LIMS Map Archival Tapes 78-098A-01C	Height, humidity, nitric acid, nitrogen dioxide, ozone, temperature	10/01/78 - 05/06/79; daily (ascending, de- scending, and combined nodes)	Global from 84 deg N to 64 deg S; vertical: 100 - 0.05 mb at 1.5 km intervals	151 Mbytes 8 tapes, CDF
Nimbus 7 SAM II BANAT 78-098A 06B	Aerosols	11/01/78 - 04/30/87, on- going; full latitude coverage in 3 months	Global from 64 deg N to 80 deg N and from 64 deg S to 80 deg S; horizontal: 1 km x 250 km, vertical: 1 km	719.3 Mbytes 102 tapes, CDF
Nimbus 7 SBVCPOZ 78-098A-09Q	Albedo, ozone	10/31/78 - 02/29/88, day- light only; 14 days for global coverage	Global: 100 - 0.3 mb; horizontal: 200 km x 200 km; vertical: 8 km for heights above 25 km and 15 km for those below	1.21 Gbytes 12 tapes, CDF
Nimbus 7 SBVC Ozone 78-098A-09D	Ozone	10/31/78 - 03/01/88, on- going; 14 days for global coverage	Global: 100 - 0.3 mb; horizontal: 200 km x 200 km; vertical: 8 km for heights above 25 km and 15 km for those below	3.12 Gbytes 43 tapes, CDF
Nimbus 7 TOMS Gridded Data 78-098A-09R	Ozone, reflectivity	10/30/78 - 03/31/89, on- going, daylight only; daily, monthly, and seasonal averages	Global; horizontal: varies from 1 deg latitude x 1.25 deg longitude at low latitudes to 1 deg latitude x 5 deg longitude at higher latitudes	546 Mbytes 11 tapes, CDF, optical disk
Nimbus 7 TOMS Ozone 78-098A-09D	Ozone	10/31/78 - 08/28/88, day- light only, ongoing; 200 msec/observation	Global; horizontal: 50 km x 50 km at nadir to 130 km x 300 km at scan extremes	17.98 Gbytes 172 tapes, CDF

GLOBAL CLIMATOLOGIES AND OCEANOGRAPHIC DATA SETS

Data Set NSSDC ID	Parameters	Temporal Coverage Resolution	Spatial Coverage Resolution	Remarks Volume Media
Angell's Global Temperature Deviations	Temperature (deviations)	01/58 - 10/88, ongoing; seasonal deviations from the mean	Global; averages over 7 latitude zones (2 polar, 2 temperate, 2 subtropic, equatorial), tropical averages, hemispheric averages, and global averages; vertical: surface to stratosphere	38 Kbytes Online CDF
Climate Analysis Center's in situ Sea Surface Temperatures	Sea surface temperature	01/01/70 - 12/31/84, dis- continued; monthly	40 deg S to 60 deg N; 2 deg x 2 deg	13 Mbytes Online CDF
Climate Analysis Center's in situ Sea Surface Temperatures blended with AVHRR derived data	Sea surface temperature	01/82 - 03/89, ongoing; monthly	Global; extrapolated above 80 deg N and below 80 deg S; 2 deg x 2 deg	13 Mybtes Online CDF
COADS Monthly Summary Trimmed Groups	Wind, temperature, clouds, heat flux, humidity, pressure, SST	1946 - 1979; monthly	Global; 2 deg x 2 deg	432 Mbytes 4 tapes, CDF
FGGE II-b Restructured Data	Clouds, humidity, pressure, salinity, sea surface temperature, temperature, winds	12/04/78 - 12/01/79; mainly at 0000, 0600, 1200, 1800 GMT though varies with source	Global; horizontal: 500 km for soundings; vertical: 4 tropospheric levels plus 3 stratospheric levels	2.63 Gbytes 90 tapes
FGGE III-b Analyses from ECMWF	Height, humidity, pressure, temperature, vertical motion, wind	12/01/78 - 11/30/79; at 0000 and 1200 GMT, plus 0600 and 1800 during special observing periods	Global: 1000 - 10 mb; horizontal: 1.875 deg grid; vertical: 15 levels	2.96 Gbytes 82 tapes, CDF
FGGE III-b Reanalyzed from ECMWF	Height, humidity, pressure, tem- perature, vertical motion, wind	01/01/79 - 03/05/79 and 05/05/79 - 07/05/79; at 0000, 0600, 1200, 1800 GMT	Global: 1000 - 10 mb; horizontal: 1.875 deg grid; vertical: 19 levels	2.19 Gbytes 21 tapes, CDF
Fleet Numerical Oceanographic Center's Analyses	Height, humidity, pressure, sea surface temperature, temperature, wind	01/01/73 - 06/30/87, on- going; 12 hours	Global; 2.5 deg x 2.5 deg and 63 x 63 North Polar Stereographic Grid	3.97 Gbytes 37 tapes, CDF
Hellerman Wind Stress Data Set	Wind stress	1870 - 1976 Monthly climatology	Global; 2 deg x 2 deg	1.6 Mbytes Online CDF
Levitus Climatologies	Temperature, salinity, dissolved oxygen, mixing depth, specific volume	1900s - 1978 Monthly, seasonal, annual climatology	Global; 1 deg x 1 deg and 5 deg x 5 deg	168 Mbytes Online CDF
Max Planck Institute Heat Fluxes	Heat flux	01/01/50 - 12/31/79; monthly climatology	Global; 2 deg x 2 deg	16 Mbytes 3 tapes, CDF
Multichannel Sea Surface Temperatures from AVHRR on NOAA satellites	Sea surface temperature	01/01/79 - 12/31/87, on- going; monthly	Global; 2.5 deg x 2.5 deg	9 Mbytes Online CDF, 9 tapes
NMC Gridded Wind Data	Wind	07/01/76 - 06/30/86; on- going	Global; 2.5 deg x 2.5 deg	906 Mbytes 4 tapes, CDF
World Monthly Surface Station Climatology	Height, humidity, precipitation, pressure, solar flux	01/01/1731 - 01/01/1987, ongoing; monthly	Global; 100 km to 200 km	100 Mbytes 1 tape (through 1987), CDF (through 1985)

CLOUDS AND RADIATION

Data Set NSSDC ID	Parameters	Temporal Coverage Resolution	Spatial Coverage Resolution	Remarks Volume Media
FIRE Cirrus in Standard Data Format	Clouds, humidity, radiation budget, stability, temperature, wind	10/13/86 - 11/02/86; variable with data source	Wisconsin FIRE Network; 30 km - 70 km	45 Mbytes 4 tapes, CDF
FIRE Marine Strato-cumulus in Standard Data Format	Clouds, humidity, temperature, wind	06/29/87 - 07/19/87; variable with data source	29 - 34 deg N to 119 - 125 deg W	45 Mbytes 4 tapes, CDF
GOES VISSR for FIRE ETO	Radiance	04/05/86 - 07/31/87	Global; 0.9 km for visible, 8 km for IR	300 Gbytes (approx.) 182 tapes
ISCCP Stage B3	Clouds, radiance	06/30/83 - 02/25/88, on-going through at least 1990; twice daily nominal imaging frequency, orbital period for NOAA satellites of 102 min	Global; nominal 24 km sampling resolution	54.93 Gbytes 456 tapes Coverage not continuous for all satellites
ISCCP C1	Clouds, optical depth, ozone, pressure, reflectance, temperature	07/01/83 - 06/30/84, on-going through at least 1990; 3 hourly averages	Global; 250 km x 250 km	3.3 Gbytes 22 tapes, CDF
ISCCP Ice/Snow	Ice, snow	07/03/83 - 01/03/87, on-going until at least 1990; daily	Global; 1 deg x 1 deg	300 Mbytes 2 tapes, CDF
ISCCP TOVS Atmosphere Data Set	Clouds, humidity, ozone, temperature	07/01/83 - 12/31/88, on-going through June 1990	Global; 2.5 deg x 2.5 deg	450 Mbytes 3 tapes, CDF
Nimbus-7 ERB-Matrix 78-098A-07C	Radiation budget	11/16/78 - 05/05/87, on-going; daily, 6-day, and monthly average	Global; 500 km x 500 km	352.2 Mbytes 98 tapes, CDF
Nimbus 7 ERB Seasonal Averages 78-098A-07I	Radiation budget	12/02/78 - 03/01/86; seasonal	Global; 500 km x 500 km	12 Mbytes 29 tapes, CDF
Nimbus 7 ERB Solar Analysis Tapes 78-098A-07L	Plage, solar flux, sunspot	11/16/78 - 03/30/86, on-going; daily averages of solar activity indicators, daily and orbital averages of solar flux	Full solar disk	4.33 Mbytes 1 tape, CDF
Nimbus 7 THIR CMATRIX 78-098A-10F	Clouds, radiance, reflectivity, snow, temperature	04/01/79 - 03/31/85; daily and monthly (ascending, descending, and combined)	Global; 500 km x 500 km	1.31 Gbytes 97 tapes, CDF
NOAA 7, 8, 9, 10 AVHRR GAC, HRPT, LAC for FIRE ETO	Radiance	04/05/86 - 04/88 (discontinuous coverage)	30 deg N to 50 deg N, 140 deg W to 60 deg E; 1 km for LAC and HRPT, 4 km for GAC	90 Gbytes (approx.) 523 tapes
NOAA TOVS HIRS/MSU/SSU for FIRE ETO	Radiance	04/05/86 - 04/88 (discontinuous coverage)	30 deg N to 50 deg N, 140 deg W to 60 deg E; 109.3 km for MSU, 147.3 km for SSU, 17.4 km for HIRS	10 Gbytes 81 tapes
NOAA Heat Budget from SR on NOAA 2, 3, 4, 5 and AVHRR on NOAA 6, 7, 8, 9, 10, 11	Radiation budget	06/01/74 - 05/31/88, on-going; daily products	Global; 125 x 125 polar stereographic grids and 2.5 deg x 2.5 deg Mercator grids	443 Mbytes 44 tapes, CDF

SOLAR IRRADIANCES

Data Set NSSDC ID	Parameters	Temporal Coverage Resolution	Spatial Coverage Resolution	Remarks Volume Media
ERBE Solar Flux from ERBS, NOAA 9, and NOAA 10 84-108B-01D 84-123A-05D	Solar flux	10/25/84 - 02/03/88, on- going; averages of the instantaneous values during 1 orbit every 2 weeks	Full solar disk	46 Kbytes Online CDF
Nimbus 7 ERB Solar Irradiances 78-098A-07Q	Solar flux	11/16/78 - 04/30/88	Full solar disk	45 Kbytes Online CDF
SMM ACRIM Daily Means of Solar Flux	Solar flux	02/80 - 12/31/88, ongoing; daily averages	Full solar disk	79 Kbytes Online CDF

MISCELLANEOUS

Data Set NSSDC ID	Parameters	Temporal Coverage Resolution	Spatial Coverage Resolution	Remarks Volume Media
GISS Global Soils Data Set	Soils (type, texture, slope)	1974 FAO soil map of the world and Matthews' 1984 vegetation data set	Global, excluding Antarctica; 1 deg x 1 deg	527 Kbytes Online CDF
GISS Global Vegetation Data Set	Albedo, cultivation intensity, vegetation	01/01/60 - 12/01/79; albedo provided by season	Global, excluding Antarctica; 1 deg x 1 deg	1.31 Mbytes Online CDF
National Geophysical Data Center's Regions of Solar Activity	Plage, sunspot	12/68 - 08/82; 1 or 2 observations for each clear day	Full disk; 1 degree solar latitude and longitude	3 Mbytes 1 tape, CDF 3.6 Mbytes Online CDF
Seasat Altimeter Gridded Elevation Data	Ice sheet surface elevation	03/01/78 - 10/10/78	Greenland and Antarctica; 5 min	150 Mbytes 3 tapes, available by special request
UNESCO River Discharge	Flow rates	Monthly, annual, climatology (1807 - 1972)	Africa, S. America, Asia, Europe, N. America (except U.S.), oceans	7 Kbytes Online CDF

DOCUMENT AND DATA REQUEST FORMS

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National Aeronautics and
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Goddard Space Flight Center
Greenbelt, Maryland 20771

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- ☐ Pilot Climate mailings
- ☐ Pilot Land mailings

SPECIFIC DOCUMENTS

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- ☐ Documents describing the operation of NSSDC and WDC-A-R&S
- ☐ Documents describing the availability of satellite experiment data
 - ☐ NSSDC Data Listing
 - ☐ Astronomy
 - ☐ Geodesy and Gravimetry
 - ☐ Ionospheric Physics
 - ☐ Meteorology
 - ☐ Particles and Fields
 - ☐ Planetary Atmospheres
 - ☐ Planetology
 - ☐ Solar Physics
 - ☐ Earth Resources Survey
- ☐ Report on Active and Planned Spacecraft and Experiments
- ☐ Spacecraft Program Bibliographies
- ☐ Reports on Models of the Near-Earth Environment
- ☐ World Data Center A for Rockets and Satellites Launch Summaries
- ☐ SPACEWARN Bulletin
- ☐ NSSDC Newsletter
- ☐ Crustal Dynamics mailings
- ☐ Pilot Climate mailings
- ☐ Pilot Land mailings

SPECIFIC DOCUMENTS

[illegible]

NSSDC DATA REQUEST FORM*

Requesters WITHIN the United States send order to: NATIONAL SPACE SCIENCE DATA CENTER CODE 633.4 GODDARD SPACE FLIGHT CENTER GREENBELT, MARYLAND 20771	Scientists OUTSIDE the United States send order to: WORLD DATA CENTER A ROCKETS AND SATELLITES CODE 630.2 GODDARD SPACE FLIGHT CENTER GREENBELT, MARYLAND 20771, USA
REQUESTER INFORMATION (Please print)	
NAME (First, Middle Initial, Last)	TITLE/POSITION (Dr., Prof., Mr., Ms., Graduate Student, Research Associate, etc.)
DIVISION/BRANCH/DEPARTMENT	MAIL CODE
ORGANIZATION	
ADDRESS	
CITY	STATE
ZIP CODE OR COUNTRY	TELEPHONE (Area Code) (Number) (Extension)
DATE OF REQUEST	DATE DATA DESIRED (Our average processing time for a request is 3 to 4 weeks. Please allow ample time for delivery. We will notify you if we cannot meet the date specified.)

INTENDED USE OF DATA (check all that apply)

- ☐ Support of a NASA effort (project, study, etc.); Contract No. _____
☐ Support of a U.S. Government effort (other than NASA)
☐ Research and analysis project (individual or company sponsored)
☐ Educational purposes (explain below)
☐ Preparation of Master's thesis
☐ Preparation of Doctoral thesis
☐ Other: _____

☐ Exhibit or display
☐ Reference material
☐ Use in publication

NSSDC requests the submission of all publications resulting from studies in which data supplied by NSSDC have been used. Please state briefly the research projects in which you are engaged and if you plan to prepare any articles based on this research.

*This form supersedes all other NSSDC Data Request Forms.

NSSDC CHARGE AND SERVICE POLICY

The purpose of the National Space Science Data Center (NSSDC) is to provide data and information from space science flight experiments in support of additional studies beyond those performed by the principal investigators. Therefore, NSSDC will provide data and information upon request to any individual or organization resident in the United States. In addition, the same services are available to scientists outside the United States through the World Data Center A for Rockets and Satellites (WDC-A-R&S). (The addresses for both NSSDC and WDC-A-R&S are given on the reverse side.) Normally, a charge is made for the requested data to cover the cost of reproduction and the processing of the request. The requester will be notified of the cost, and payment must be received prior to processing the request. However, the Director of NSSDC may waive, as resources permit, the charge for modest amounts of data when they are to be used for scientific studies or for specific educational purposes and when they are requested by an individual affiliated with (1) NASA installations, NASA contractors, or NASA grantees; (2) other U.S. Government agencies, their contractors, or their grantees; (3) universities or colleges; (4) state or local governments; and (5) nonprofit organizations.

DATA REQUESTED

NSSDC DATA SET ID NUMBER	Spacecraft, Experiment, and Data Set Names	Form of Data* (e.g., 16mm microfilm) or Size of Reproduction (e.g., contact, 8x10, etc.)	Data Take No., FDS/DAS Times, Mission Frame No., Timespan Needed, Film Frame Numbers, etc.

Additional Specifications (Negatives, Positives, Paper Prints, etc.)

*If requesting data on magnetic tape, please supply the necessary information below.

<u>Density</u>	<u>Mode</u>	<u>No. of Tracks</u>	<u>Computer</u>
<input type="checkbox"/> 800 bpi	<input type="checkbox"/> BIN <input type="checkbox"/> EBCDIC	<input type="checkbox"/> 7	(Type/Model)
<input type="checkbox"/> 1600 bpi	<input type="checkbox"/> BCD <input type="checkbox"/> ASCII	<input type="checkbox"/> 9	
<input type="checkbox"/> 6250 bpi	Maximum block size _____		

- ☐ New tapes will be supplied prior to processing.
- ☐ Original NSSDC tapes will be returned.
- ☐ I shall pay for new tapes.

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